MAINVIEW® for CICS
Customization Guide

Version 5.6

July 15, 2002

‹bmcsoftware

Contacting BMC Software

You can access the BMC Software Web site at **http://www.bmc.com**. From this Web site, you can obtain information about the company, its products, corporate offices, special events, and career opportunities.

United States and Canada		Outside United States and Canada	
Address	BMC Software, Inc. 2101 CityWest Blvd. Houston TX 77042-2827	**Telephone**	(01) 713 918 8800
		Fax	(01) 713 918 8000
Telephone	713 918 8800 or 800 841 2031		
Fax	713 918 8000		

Customer Support

You can obtain technical support by using the Support page on the BMC Software Web site or by contacting Customer Support by telephone or e-mail. To expedite your inquiry, please see "Before Contacting BMC Software."

Support Web Site

You can obtain technical support from BMC Software 24 hours a day, 7 days a week at **http://www.bmc.com/support.html**. From this Web site, you can

- read overviews about support services and programs that BMC Software offers
- find the most current information about BMC Software products
- search a database for problems similar to yours and possible solutions
- order or download product documentation
- report a problem or ask a question
- subscribe to receive e-mail notices when new product versions are released
- find worldwide BMC Software support center locations and contact information, including e-mail addresses, fax numbers, and telephone numbers

Support by Telephone or E-mail

In the United States and Canada, if you need technical support and do not have access to the Web, call 800 537 1813. Outside the United States and Canada, please contact your local support center for assistance. To find telephone and e-mail contact information for the BMC Software support center that services your location, refer to the Contact Customer Support section of the Support page on the BMC Software Web site at **www.bmc.com/support.html**.

Before Contacting BMC Software

Before you contact BMC Software, have the following information available so that Customer Support can begin working on your problem immediately:

- product information

  — product name
  — product version (release number)
  — license number and password (trial or permanent)

- operating system and environment information

  — machine type
  — operating system type, version, and service pack or other maintenance level such as PUT or PTF
  — system hardware configuration
  — serial numbers
  — related software (database, application, and communication) including type, version, and service pack or maintenance level

- sequence of events leading to the problem

- commands and options that you used

- messages received (and the time and date that you received them)

  — product error messages
  — messages from the operating system, such as `file system full`
  — messages from related software

Contents

Glossary

Index

Figures

Tables

About This Book

This book describes procedures to manually customize MAINVIEW® for CICS and MAINVIEW® AutoOPERATOR™ (AutoOPERATOR). Both products belong to the MAINVIEW family of products that operate on the BBI-SS PAS architecture. The procedures in this book adapt both products to your site's environment.

You should have installed MAINVIEW for CICS and/or MAINVIEW AutoOPERATOR for CICS before completing the procedures in this book. Installation instructions are described in the *BMC Software Enterprise Server Installation System*.

You must implement at least one BBI-SS PAS before customizing MAINVIEW for CICS and MAINVIEW AutoOPERATOR. Refer to the *MAINVIEW Common Customization Guide* for instructions and information about how to prepare the MAINVIEW environment.

After the products are installed and the MAINVIEW subsystems are operational, you can complete the procedures in this book.

Who Should Read This Book

This book is intended for site personnel responsible for configuring products for use after they have been installed. Readers should be familiar with their site's operating environment and understand CICS concepts.

How This Book Is Organized

This book is organized as follows. In addition, an index appears at the end of the book.

Chapter/Appendix	Description
Chapter 1, "Migration Considerations"	Describes changes to be made and issues to consider when migrating from earlier versions of MAINVIEW for CICS to version 5.4.
Chapter 2, "How Product Libraries Should Be Used"	Describes the MAINVIEW for CICS distributed libraries and their proper use.
Chapter 3, "Standard Implementation Procedures"	Describes the procedures required to implement functions between a BBI-SS PAS and a CICS region.
Chapter 4, "Optional Implementation Procedures"	Describes optional procedures for customizing MAINVIEW for CICS to your site's environment.
Chapter 5, "Using Dual CMRDETL Data Sets"	Describes how to use dual CMRDETL data sets to collect detail transaction records almost continuously.
Chapter 6, "Customizing the Application Trace Facility"	Describes how to customize the MAINVIEW for CICS application trace facility to meet your tracing requirements.
Chapter 7, "Implementing Security"	Describes how to implement security for MAINVIEW for CICS and AutoOPERATOR for CICS functions.
Chapter 8, "Common Tasks"	Provides checklists for some of the common tasks involved in customizing MAINVIEW for CICS.
Appendix A, "Additional MAINVIEW AutoOPERATOR Functions"	Lists additional AutoOPERATOR for CICS functions that become available when you establish communications between a BBI-SS PAS and CICS.
Appendix B, "Deactivating CICS Global User Exit Trace"	Describes how to turn off the user exit trace entries generated by MAINVIEW for CICS and AutoOPERATOR for CICS.
Appendix C, "CICS Temporary Storage Usage"	Describes the MAINVIEW for CICS requirements for CICS temporary storage usage.
Appendix D, "Manual Control of Automated Functions"	Describes how to manually control certain MAINVIEW for CICS functions that are usually automated.
Appendix E, "CICS PCT and PPT Usage"	Describes the Program Control Table (PCT) and Processing Program Table (PPT) entries generated by MAINVIEW for CICS and AutoOPERATOR for CICS.
Appendix F, "BBSAMP Data Set Members"	Lists the sample members distributed in the BBSAMP data set for MAINVIEW for CICS and AutoOPERATOR for CICS.
Appendix G, "Archiving Data (CMRPURG)"	Describes how to use the CMRPURG program to archive and purge data from CMRDETL data sets.
Appendix H, "User Exit Interface (CMRCUEX)"	Describes how to use the CMRCUEX user exit interface to perform additional functions.

Related Documentation

BMC Software products are supported by several types of documentation:

- online and printed books
- online Help
- release notes and other notices

In addition to this book and the online Help, you can find useful information in the publications listed in the following table. As "Online and Printed Books" on page xvi explains, these publications are available on request from BMC Software.

Category	Document	Description
Installation documents	*OS/390 and z/OS Installer Guide*	Provides instructions for installing and maintaining CPO- or SMP-packaged BMC Software products.
	MAINVIEW Installation Requirements Guide	Describes the software and storage environment required to install the product.
	MAINVIEW Common Customization Guide	Describes how to set up the operating environment for MAINVIEW products to your site's requirements.
	Implementing Security for MAINVIEW	Provides procedures to create SAF resource definitions for the services and commands in MAINVIEW for CICS.
	MAINVIEW Administration Guide	Describes how to manage and maintain the operating environment for MAINVIEW products at your site.
User documents	*Using MAINVIEW*	Describes how to use the common MAINVIEW interface.
	Getting Started with MAINVIEW for CICS	Presents a series of short exercises designed to introduce new users to MAINVIEW for CICS.
	MAINVIEW for CICS Online Services Reference Manual	Describes the MAINVIEW for CICS online services, including full-screen displays and windows-based views.
	MAINVIEW for CICS PERFORMANCE REPORTER User Guide	Describes how to produce a variety of batch reports, including • standard CICS performance and resource reports • custom reports written with the Performance Reporting Language (PRL)
	MAINVIEW for CICS Monitors Guide	Describes the MAINVIEW for CICS data collection monitors, including how to start, stop, and configure them; and how to use the collected data in reports.

Category	Document	Description
	MAINVIEW Quick Reference	Describes commonly used commands and functions.
Release documents	*MAINVIEW for CICS Release Notes*	Describes the product enhancements and fixes that are included in the current version of MAINVIEW for CICS.

Online and Printed Books

The books that accompany BMC Software products are available in online format and printed format. If you are a Windows or Unix user, you can view online books with Acrobat Reader from Adobe Systems. The reader is provided at no cost, as explained in "To Access Online Books." You can also obtain additional printed books from BMC Software, as explained in "To Request Additional Printed Books."

To Access Online Books

Online books are formatted as Portable Document Format (PDF) files. You can view them, print them, or copy them to your computer by using Acrobat Reader 3.0 or later. You can access online books from the documentation compact disc (CD) that accompanies your product or from the World Wide Web.

In some cases, installation of Acrobat Reader and downloading the online books is an optional part of the product-installation process. For information about downloading the free reader from the Web, go to the Adobe Systems site at **http://www.adobe.com**.

To view any online book that BMC Software offers, visit the support page of the BMC Software Web site at **http://www.bmc.com/support.html**. Log on and select a product to access the related documentation. (To log on, first-time users can request a user name and password by registering at the support page or by contacting a BMC Software sales representative.)

To Request Additional Printed Books

BMC Software provides printed books with your product order. To request additional books, go to **http://www.bmc.com/support.html.**

Online Help

The MAINVIEW for CICS product includes online Help. In the MAINVIEW for CICS ISPF interface, you can access Help by pressing **F1** from any ISPF panel or MAINVIEW window.

Release Notes and Other Notices

Printed release notes accompany each BMC Software product. Release notes provide current information such as

- updates to the installation instructions
- last-minute product information

In addition, BMC Software sometimes provides updated product information between releases (in the form of a flash or a technical bulletin, for example). The latest versions of the release notes and other notices are available on the Web at **http://www.bmc.com/support.html**.

Conventions

This book uses the following general conventions:

Item	Example
information that you are instructed to type	Type **SEARCH DB** in the designated field. Type **search db** in the designated field. (Unix)
specific (standard) keyboard key names	Press **Enter**.
field names, text on a panel	Type the appropriate entry in the **Command** field.
directories, file names, Web addresses	The BMC Software home page is at **www.bmc.com**.
nonspecific key names, option names	Use the HELP function key. KEEPDICTIONARY option
MVS calls, commands, control statements, keywords, parameters, reserved words	Use the SEARCH command to find a particular object. The product generates the SQL TABLE statement next.

Item	Example

code examples, syntax statements, system messages, screen text	`//STEPLIB DD`
	
	`The table table_name is not available.`

emphasized words, new terms, variables	The instructions that you give to the software are called *commands*. In this message, the variable *file_name* represents the file that caused the error.

This book uses the following types of special text:

Note: Notes contain important information that you should consider.

Warning!   Warnings alert you to situations that could cause problems, such as loss of data, if you do not follow instructions carefully.

Tip: Tips contain useful information that may improve product performance or that may make procedures easier to follow.

Chapter 1   Migration Considerations

This chapter describes changes you should make to your existing environment and issues you should consider when migrating from earlier releases of MAINVIEW for CICS to version 5.6.

CICS Support

MAINVIEW for CICS version 5.6 supports the following releases of CICS:

- CICS/ESA 4.1
- CICS Transaction Server (CTS) 1.1
- CICS Transaction Server (CTS) 1.2
- CICS Transaction Server (CTS) 1.3
- CICS Transaction Server (CTS) 2.1
- CICS Transaction Server (CTS) 2.2

If your site continues to use CICS releases that are no longer supported, you must exclude those regions from MAINVIEW for CICS. You may continue to use earlier releases of MAINVIEW for CICS to manage non-supported regions.

Note: After installing a new version of CICS, the CAS and BBI-SS PAS must be recycled.

Modified CMRDETL Records

It is not necessary to redefine or reallocate CMRDETLx files. Existing history files generated from a prior release can contain MAINVIEW for CICS 5.6.0 history data. In addition, it is not necessary to redefine or reallocate CMRDETLx files when changing FILEXPND=NO to FILEXPND=YES and vice versa. However, once release 5.6.0 data is put into CMRDETLx files, the MAINVIEW for CICS 5.6.0 decompression routines—CMRCMPR and CMRCMPW—must be used to decompress the records.

Record Size and MAXFILE

Because of the increased size of the T6E history record; the MAXFILE CMRSOPT parameter has been reduced to 40 when FILEXPND=YES is specified. This keeps the maximum record size under the 12,256 maximum record size in the VSAM definition for the CMRDETLx data sets.

Batch Reporting

The batch reporting programs used to report on the information contained in history records must reference the release 5.6.00 libraries. Several things to consider:

- The output data set when running the CMRCMPW decompression job should indicate a BLKSIZE of 12256 in the DCB parameters. See BBSAMP member CMRCJCL.

- The T6EOFFFL field should be used to access the first resource entry. The T6EQUAL flag should be used to determine if the resource entries are expanded.

- The T6EFENLN field should be used to determine the length of a resource entry.

- New PRL sample members demonstrate how to process DB2 resource entries (CMRPRL30) and MQ resource entries (CMRPRL31).

- Resource entries must be processed separately.

Note: The structure of the resource entries varies by type, i.e., a file resource entry differs from an MQ Series entry at the same offsets. A batch program processing the first field in each expanded resource entry, gets file reads for a file resource entry, select counts for a DB2 resource entry, and open counts for an MQ Series resource entry. The type indicator, T6EFILEI, should be checked in all cases to ensure that similar entries are processed.

CICS Statistics

All current CICS statistics records are supported and can be utilized with the new CMRSTATS program. CMRSTATS replaces CMRSTATC.

Note: The CMRSTATC program is still supported for compatibility with earlier releases of MAINVIEW for CICS. However, due to changes in CICS statistics from one release to the next, the records that CMRSTATC produces may contain incomplete or invalid data.

For complete information about CMRSTATS, see the *MAINVIEW for CICS PERFORMANCE REPORTER User Guide*.

Switching the BBI-SS PAS From Older Versions

If a BBI-SS PAS with the same SSID on the same MVS image is switched between version 5.5.01 and any other version of MAINVIEW for CICS, it is necessary to either re-IPL the MVS image or start the BBI-SS PAS as follows:

Start the existing BBI-SS PAS with the parameter

START=FREE

START=FREE releases any control blocks held by the existing BBI-SS PAS. The BBI-SS PAS starts and then terminates immediately after the storage is released.

Start the new BBI-SS PAS with the parameter

START=COLD

START=COLD obtains new control blocks for the new BBI-SS PAS.

If you have questions about this problem, contact your BMC Software MAINVIEW for CICS technical support analyst at 800 537 1813 (USA or Canada) or call your local support center.

Migrating from Older Versions

If you use any of the sample batch report programs provided by MAINVIEW for CICS, or have written your own report programs using SAS, PRL, or COBOL, the following rules must be followed:

- All COBOL report programs must be re-compiled and re-link edited using the MAINVIEW for CICS version 5.6.00 libraries. This step ensures that the copy books for the new Type 6E record format are incorporated into the programs.

- Any SAS program that accesses file information in Type 6E records must be changed to use the T6EOFFFL field as a pointer to the file information area. SAS programs must also use the T6EQUAL flag to determine if expanded file entries are expanded.

  A sample program is in member CMRSAS21 of your BBSAMP data set; this program illustrates the use of these fields for accessing file information.

- All COBOL, SAS, and PRL report programs must run using the current libraries.

- All COBOL, SAS, and PRL programs must process the file/resource entries separately using the T6EFILEI field to determine the entry type. Entries of different types should *not* be processed together.

Note: The structure of the resource entries varies by type, i.e., a file resource entry differs from an MQ Series entry at the same offsets. A batch program processing the first field in each expanded resource entry, gets file reads for a file resource entry, select counts for a DB2 resource entry, and open counts for an MQ Series resource entry. The type indicator, T6EFILEI, should be checked in all cases to ensure that similar entries are processed.

Chapter 2   How Product Libraries Should Be Used

Several distributed libraries are included with MAINVIEW for CICS, including a parameter library (BBPARM), a samples library (BBSAMP), and a profile library (BBPROF). Use the contents of these distributed libraries as models to create site-customized product libraries, either manually or with AutoCustomization.

Warning!   The distributed libraries should never be modified. If you change the distributed libraries, subsequent SMP maintenance will overwrite your changes.

Throughout the MAINVIEW documentation set, references to these libraries use the distributed name. However, when you need to make changes, be sure to use the corresponding library that has been customized for your site. Table 2-1 lists the distributed name, the corresponding customized library created by AutoCustomization, and leaves space for you to note any other corresponding library that may have been created for your site.

Table 2-1   Product Libraries

Distributed library name	Library created by AutoCustomization	Other site-customized copy
BBPARM	UBBPARM	
BBSAMP	UBBSAMP	
BBPROF	SBBPROF	

See "Using MAINVIEW Product Libraries" in the *MAINVIEW Common Customization Guide* or "Using Product Libraries" in the *MAINVIEW Administration Guide* for more information about all the product libraries.

Chapter 3   Standard Implementation Procedures

This chapter describes the procedures required to implement functions between a BBI-SS PAS and a CICS region. These procedures apply to MAINVIEW for CICS, AutoOPERATOR for CICS, or both.

Note: For a list of the AutoOPERATOR for CICS functions that are available when communications between a BBI-SS PAS and CICS is established, see Appendix A, "Additional MAINVIEW AutoOPERATOR Functions."

Implementation Considerations

This section discusses several issues you should consider before implementing MAINVIEW for CICS, AutoOPERATOR for CICS, or both products together.

Site-Specific Security

BCRT, FST2, JNL2, FIC2, FCM1, and FCD2 transactions run asynchronously. The TRANSEC parameter of the transaction definition must have a value of 1 when CICS security is used. If your site uses an external security manager like RACF, CA-TOP SECRET, or CA-ACF2, these transactions must be authorized to run asynchronously.

Transaction SMN2 can be RACF-secured.

Temporary Storage Table (TST) Compatibility

Perform the following steps for each CICS region that communicates with a BBI-SS PAS to avoid conflicts between the MAINVIEW temporary storage prefix and any existing recoverable temporary storage definitions.

Step 1   Determine whether a Temporary Storage Table (TST) is currently used.

If a TST is not used, there is no conflict.

Step 2   For an existing TST, determine whether the DATAID parameter for DFHTST TYPE=RECOVERY or TYPE=REMOTE macros specifies a value that conflicts with the following string:

```
CMRI
```

If there is a conflict, see Appendix C, "CICS Temporary Storage Usage" to apply a ZAP that changes the prefix of MAINVIEW temporary storage.

Processing CICS Statistical Records

MAINVIEW for CICS writes additional type 110 records to SMF data sets when it monitors a CICS region. MAINVIEW for CICS records are written with a subtype of X'0B02' compared to the X'0002' subtype of a CICS SMF 110 record. These records are not compatible with the CICS statistics program, DFHJUP, and some vendor products that use SMF 110 records. In that case, MAINVIEW for CICS records must be excluded from the SMF data set before CICS statistics are processed.

An IBM program named DFHSTUP can exclude non-SMF records from the data set. DFHSTUP is described in the IBM *CICS Installation and Operations Guide*. BBSAMP member CMRSTATX also can remove MAINVIEW for CICS records from the SMF data set.

Completing the Implementation Procedures

This section gives an overview of the major steps to implement MAINVIEW for CICS and AutoOPERATOR for CICS in CICS/ESA systems. Implementation is accomplished by completing a series of procedures. Each step of the overall implementation procedure consists of one or more smaller procedures that must be completed before proceeding to the next step.

Figure 3-1 shows the major steps to implement MAINVIEW for CICS and AutoOPERATOR for CICS.

Figure 3-1   Major Steps in the MAINVIEW for CICS Implementation Procedure
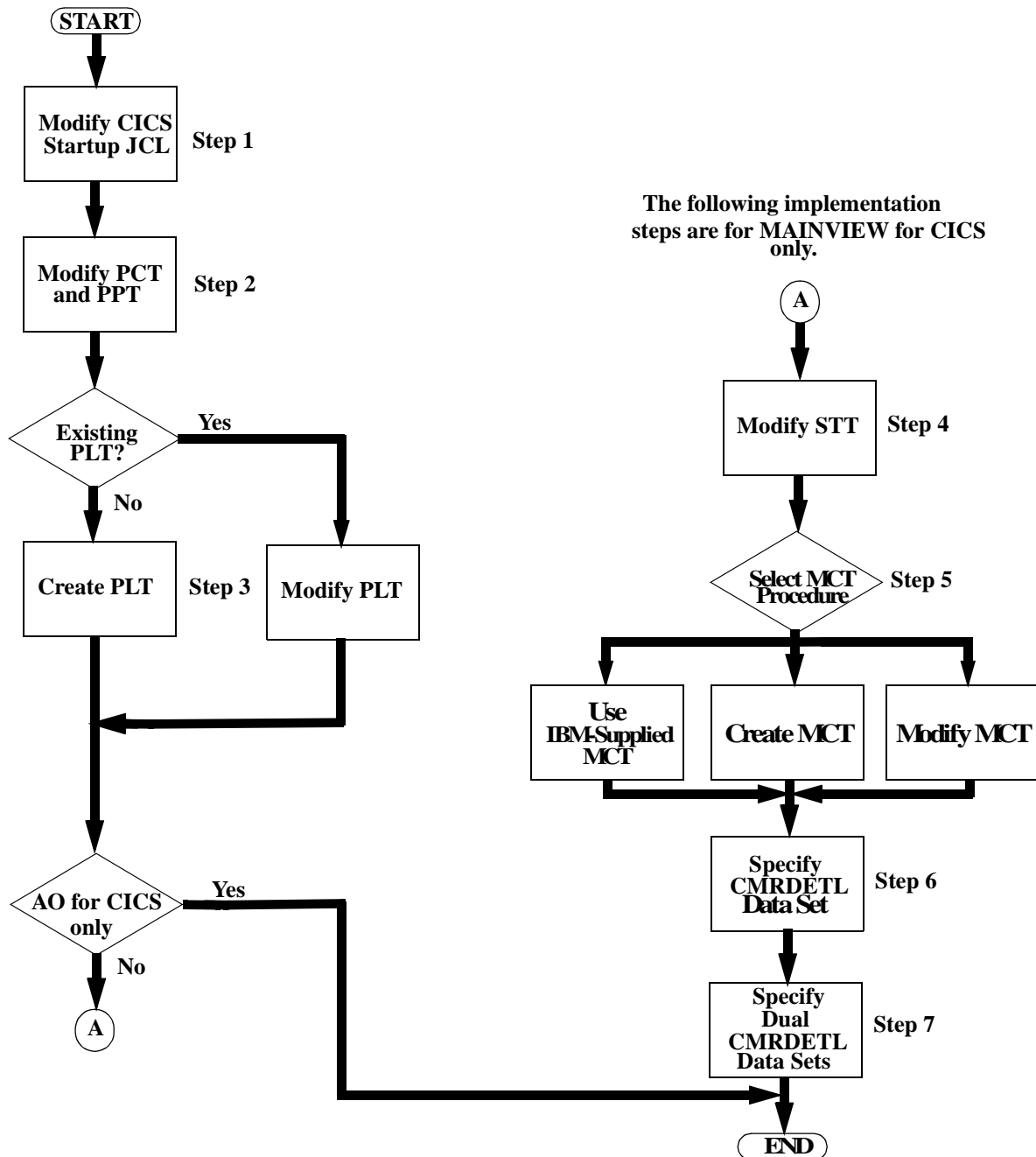
Steps 3 and 5 give you a choice of several procedures to implement the Program List Table (PLT) and Monitoring Control Table (MCT), respectively.

Only the first three steps must be completed to implement AutoOPERATOR for CICS. All seven steps are required for MAINVIEW for CICS. The rest of this chapter shows how to complete the implementation steps shown in Figure 3-1 on page 3-3.

Step 1: Modifying CICS Startup JCL

Complete the following procedure for each CICS region that communicates with a BBI-SS PAS. This procedure applies to both MAINVIEW for CICS and AutoOPERATOR for CICS.

Step 1 To identify the target BBI-SS PAS to the CICS region, do one of the following:

- Add the following system initialization (SIT) parameter to the CICS PARM statement:

   INITPARM= (CMRFSET*n*= 'SUBSYS=*subsys*')

   Define *n* as the release of CICS:

   2   CTS 2.2
   1   CTS 2.1
   0   CTS 1.3
   9   CTS 1.2
   8   CTS 1.1
   6   CICS/ESA 4.1

   Define *subsys* as the subsystem identifier for the PAS.

   Note: The SUBSYS parameter must be enclosed in single quotes in the PARM statement.

- Add the following DD statement to the CICS execution step:

   //BBIPARM DD DSN=*prefix*.UBBPARM,DISP=SHR

   Define *prefix* according to your site's naming convention for the UBBPARM data set.

   One of the following members in this UBBPARM data set must contain a TARGET statement for the CICS region:

BMCICS00

This member can contain TARGET statements only for CICS regions. The CICS region scans BMCICS00 for target definitions during initialization. The BBI-SS PAS does not process BMCICS00.

BBIJNT00

This member can contain TARGET statements for both CICS regions and the BBI-SS PAS. Targets defined in BBIJNT00 are considered static definitions; they override dynamic target definitions for CICS regions with the same name.

Note: For more information on TARGET statements and BBIJNT00, see the *MAINVIEW Common Customization Guide*.

For information on dynamic targets, see "Implementing Dynamic Target Support" on page 4-28.

Step 2   Add the following DD statement to the DFHRPL library concatenation in the CICS execution step:

//   DD DSN=prefix.BBLINK,DISP=SHR

The CICS startup JCL modification is complete.

Next, modify the Program Control Table (PCT) and Processing Program Table (PPT) by following the instructions in "Step 2: Modifying the PCT and PPT" on page 3-5.

Step 2: Modifying the PCT and PPT

The Program Control Table (PCT) defines which transactions can be executed by CICS. The Processing Program Table (PPT) defines program control information for all user-written and CICS-supplied application programs and maps. This procedure modifies the PCT and PPT to identify MAINVIEW for CICS and AutoOPERATOR for CICS transactions and programs to a CICS system.

Modify the PCT and PPT for each CICS region that communicates with a BBI-SS PAS using RDO.

The CMRCSDES member in the BBSAMP data set contains example JCL with inline PCT and PPT definitions. Use this JCL to define transactions and programs required for BBI-SS PAS to CICS communication by MAINVIEW for CICS and AutoOPERATOR for CICS.

Step 1   Read the comments in CMRCSDES and then modify the JCL accordingly.

Step 2   Submit the JCL.

Step 3   Check the output and ensure the return code is not higher than 4.

Step 4   Verify that the transaction IDs do not conflict with any existing transaction IDs.

If a conflict exists and the existing transaction IDs cannot be changed, see Appendix E, "CICS PCT and PPT Usage."

When you have successfully completed these steps, you have modified both the PPT and the PCT using RDO.

Next, modify the PLT table to automate initiation of BBI-SS PAS to CICS communication at CICS startup by following the instructions in "Step 3: Modifying the PLT" on page 3-6.

Step 3: Modifying the PLT

The Program List Table (PLT) specifies which programs are executed in the post-initialization phase of CICS startup. This procedure modifies the PLT to initiate BBI-SS PAS to CICS communication at CICS startup. In addition, MAINVIEW for CICS data collection begins at CICS startup according to the parameters specified with the START statement of the CMRSOPT macro.

Use of the PLT for MAINVIEW for CICS and AutoOPERATOR for CICS is optional. However, if you do not use the PLT, you must manually start BBI-SS PAS to CICS communication using either the SMN2 transaction from within a CICS region or the FST2 transaction from the MVS console. You can also use these transactions to manually start MAINVIEW for CICS data collection. For more information about using these transactions, see Appendix D, "Manual Control of Automated Functions."

There are two different procedures in this section:

- "Modifying an Existing PLT" on page 3-7
- "Creating a PLT" on page 3-8

Complete one procedure based upon whether you have an existing PLT. Either procedure automates the initiation of BBI-SS PAS to CICS communication and MAINVIEW for CICS data collection at CICS startup.

Modifying an Existing PLT

Complete this procedure if you have an existing PLT that you want to modify:

Step 1   Edit the PLT by either invoking the CMRPLT macro or inserting the appropriate program name:

- To use the CMRPLT macro, find the following statement at the end of the table:

  `DFHPLT TYPE=FINAL`

  Insert the CMRPLT macro invocation immediately before the DFHPLT TYPE=FINAL statement:

  CMRPLT RELEASE=41|11|12|13|21,KILLEXIT=YES|NO

  The CMRPLT macro keyword parameters are described in Table 3-1 on page 3-10.

- To insert the program name manually, find the following statement:

  `TYPE=ENTRY,PROGRAM=DFHDELIM`

  Insert the program name immediately after the PROGRAM=DFHDELIM statement:

  TYPE=ENTRY,PROGRAM=CMRFSET*n*

  Define *n* as the release of CICS:

2	CTS 2.2
1	CTS 2.1
0	CTS 1.3
9	CTS 1.2
8	CTS 1.1
6	CICS/ESA 4.1

Step 2   Assemble the newly revised PLT.

You must include the BBSAMP data set in the assembler SYSLIB concatenation.

Step 3   Add the PLTPI parameter to the SIT to identify this updated PLT to CICS:

PLTPI=*xx*

Define *xx* as the suffix of this PLT.

When you have successfully completed the above steps, you have modified the PLT for automatic start up of BBI-SS PAS to CICS communication and MAINVIEW for CICS data collection.

AutoOPERATOR for CICS

Implementation for AutoOPERATOR for CICS is complete. Optional customization, as described in "Customizing AutoOPERATOR for CICS" on page 4-31, can be performed to adjust AutoOPERATOR for CICS to your site's requirements.

MAINVIEW for CICS

Next, modify the SIT to define the CICS environment during startup by following the instructions in "Step 4: Modifying the SIT" on page 3-10.

Creating a PLT

Complete this procedure if you need to create a PLT:

Step 1   Create a new PLT in your CICS table library using a member name that adheres to the naming conventions at your site.

The new member should contain either a CMRPLT macro invocation or the appropriate program name:

- To use the CMRPLT macro, add this macro invocation:

    CMRPLT RELEASE=41|11|12|13|21,SUFFIX=BI,KILLEXIT=YES|NO

    The CMRPLT macro keyword parameters are described in Table 3-1 on page 3-10.

- To use the program name, add this statement after the PROGRAM=DFHDELIM statement:

    TYPE=ENTRY,PROGRAM=CMRFSET*n*

Define *n* as the release of CICS:

2   CTS 2.2
1   CTS 2.1
0   CTS 1.3
9   CTS 1.2
8   CTS 1.1
6   CICS/ESA 4.1

Step 2 Assemble the newly revised PLT.

You must include the BBSAMP data set in the assembler SYSLIB concatenation.

Step 3 Add the PLTPI parameter to the SIT to identify this updated PLT to CICS:

PLTPI=xx

Define *xx* as the suffix of this PLT.

When you have successfully completed the above steps, you have modified the PLT for automatic startup of BBI-SS PAS to CICS communication and MAINVIEW for CICS data collection.

AutoOPERATOR for CICS

Implementation for AutoOPERATOR for CICS is complete. Optional customization, as described in "Customizing AutoOPERATOR for CICS" on page 4-31, can be performed to adjust AutoOPERATOR for CICS to your site's requirements.

MAINVIEW for CICS

Next, modify the SIT to define the CICS environment during startup by following the instructions in "Step 4: Modifying the SIT" on page 3-10.

CMRPLT Macro Keywords for PLT Entries

Table 3-1 describes the CMRPLT macro keyword parameters used in the preceding CMRPLT macro instructions.

Table 3-1   **CMRPLT Macro Keyword Descriptions**

Keyword	Values	Description
RELEASE	41|11|12|13|21|22	Specifies the release of the CICS system that uses the PLT: CICS/ESA 4.1.0, CTS 1.1, CTS 1.2, CTS 1.3, CTS 2.1, or CTS 2.2.
SUFFIX	BI	Specifies the suffix for the new PLT. Specify a suffix that adheres to the naming conventions at your site. BI is the default. If you do not use the default, create an entry for DFHPLT*xx* (where *xx* is the suffix) in the PPT table of the CICS system that uses the PLT. When SUFFIX is used, TYPE=INITIAL and TYPE=FINAL statements are generated automatically.
KILLEXIT	YES|<u>NO</u>	Specifies whether the automated task kill exit (CMRXEIO) should be invoked at PLT initialization time. The default is NO. You can manually start the task kill exit in an active CICS region using the XEIO transaction. For more information about this transaction, refer to Appendix D, "Manual Control of Automated Functions."

Step 4: Modifying the SIT

Entries in the CICS System Initialization Table (SIT) define the CICS environment during startup.

Edit the SIT for each CICS region that communicates with a BBI-SS PAS:

Step 1   Verify the following parameter is specified:

```
PLTPI=xx
```

Define *xx* as the suffix of the PLT you updated in "Step 3: Modifying the PLT" on page 3-6.

Step 2   Specify the following CICS monitoring options:

MN=ON
MNPER=ON
MNEXC=ON

> **Note:**   If the SIT is not modified as shown here, options are dynamically altered at data collection. If you do not want CICS performance and/or exception records written to SMF, specify **OFF** for these values.

Step 3   Add **MCT=2$** to use the IBM-supplied Monitoring Control Table (MCT) if you do not have an existing MCT and do not have local DL/I or DBCTL active.

Otherwise, complete the instructions in "Step 5: Modifying the MCT" on page 3-12, and add the suffix for that modified MCT.

Step 4   Specify the following parameter:

MNCONV=YES

Step 5   Assemble the newly revised SIT.

Notes:

- As an alternative to modifying the SIT, the parameters required by MAINVIEW for CICS can be specified as override parameters during CICS initialization. Be sure to check these overrides to ensure the table change is effective.

- If you change the SIT options described above, CICS recognizes some of these options only after cold starting the system. On a warm or emergency restart, NEWSIT=YES must be specified to enable CICS to recognize the changes.

When you have successfully completed the above steps, you have modified the SIT to define the CICS environment during startup.

Next, modify the MCT by following the instructions in "Step 5: Modifying the MCT" on page 3-12.

Step 5: Modifying the MCT

The Monitoring Control Table (MCT) defines which resources are monitored by MAINVIEW for CICS for each CICS region. You should modify the MCT if you want MAINVIEW for CICS to

- monitor DL/I or DBCTL resources

- store additional user data in CICS SMF 110 records for use by tools (such as MICS) that process those records

    Note: The BBSAMP data set contains two members that illustrate the format of this user data. CMR$DSAS contains SAS definitions and CMR$DATA contains an Assembler DSECT.

There are three different procedures in this section:

- "Using the IBM-Supplied MCT" on page 3-12
- "Modifying an Existing MCT" on page 3-13
- "Creating a New MCT" on page 3-13

Complete one procedure based upon whether you have an existing MCT and, if not, whether you want to use the IBM-supplied sample.

The MAINVIEW for CICS BBSAMP data set contains the following sample MCT members:

- CMRMCTX3 contains examples of CICS table entries that can be copied into an existing MCT.

- CMRMCT3 contains CICS table entries that can form the basis of a new MCT.

Using the IBM-Supplied MCT

To use the IBM-supplied sample Monitoring Control Table, DFHMCT2$, specify **MCT=2$** in the SIT as described in "Step 4: Modifying the SIT" on page 3-10. You can use DFHMCT2$ without any modifications if you do not require additional MAINVIEW for CICS monitoring support.

DFHMCT2$ contains CICS event monitoring points for DL/I and DBCTL. By default, unused members are commented out in DFHMCT2$. If you want MAINVIEW for CICS to monitor DL/I or DBCTL resources, uncomment the following members and reassemble the MCT:

- DFH$MCTL (for local DL/I support)
- DFH$MCTD (for DBCTL support)

If you want MAINVIEW for CICS to collect additional user data and store it in the CICS SMF 110 record, copy the CMR$DMCT member from the BBSAMP data set into DFHMCT2$.

Modifying an Existing MCT

Complete this procedure if you have an existing MCT:

Step 1   Review the parameters of the existing MCT if it specifies CMP recording.

The parameters must be compatible with the CMRMCTX3 member.

Step 2   Copy the CMRMCTX3 member from the BBSAMP data set if the existing MCT is not set up for CMP recording.

CMRMCTX3 contains the MCT entries required for DL/I and DBCTL monitoring. Place the copied member immediately after the following statement, which is near the start of the table:

```
DFHMCT TYPE=INITIAL
```

Step 3   Copy the CMR$DMCT member from the BBSAMP data set and place it immediately after the entries you copied in from CMRMCTX3.

CMR$DMCT contains the MCT entry required for the collection of SMF 110 user data.

Step 4   Review the comments included in the CMRMCTX3 and CMR$DMCT members and make the indicated changes, if any.

Step 5   Assemble the newly revised MCT.

Creating a New MCT

Complete this procedure if you do not have an existing MCT and do not want to use the IBM-supplied sample:

Step 1   Copy the CMRMCT3 sample member from the BBSAMP data set to your CICS table library.

CMRMCT3 contains a sample MCT table with the entries required for DL/I and DBCTL monitoring.

Step 2   Copy the CMR$DMCT member from the BBSAMP data set to the new MCT table.

CMR$DMCT contains the MCT entry required for the collection of SMF 110 user data.

Step 3   Review the comments included in the CMRMCT3 and CMR$DMCT members and make the indicated changes, if any.

Step 4   Assemble the newly created MCT table.

When you assemble the MCT, concatenate SYS1.AMODGEN to the SYSLIB DD definition and to the macro libraries that are normally used.

Note: If user clocks or count specifications exist, the starting DL/I clock and count numbers in the MCT samples can be changed. If this is done, however, the CMRSOPT macro must be changed to reflect the new clock or count values (see "Setting Monitoring Conditions (CMRSOPT)" on page 4-2).

Step 6: Specifying CMRDETL Data Sets (Optional)

Details of a CICS transaction are stored as a record on one or two CMRDETL data sets. A CMRDETL record contains the performance details of the transaction. MAINVIEW for CICS uses CMRDETL records to produce batch reports and display transaction performance through the online HISTORY service.

This procedure is optional. If you do not complete it, transaction data is not available for batch reports and the HISTORY service.

Note: You should not place CMRDETL data sets under the control of DASD pooling software such as EasyPOOL (formerly POOL-DASD) from BMC Software.

The following procedure creates single or dual CMRDETL data sets. You must repeat this procedure for each region that you want collect detail transaction data.

Step 1   Copy member CMRDDTL from your BBSAMP to UBBSAMP data sets.

Ensure the new member name conforms to your site's naming conventions.

Step 2   Edit the member created in the previous step as instructed in the comments of the member and in the following steps.

Step 3   Replace the line that begins:

```
//CMRDDTL   JOB
```

with a valid job statement for your site.

Step 4   Calculate the primary and secondary record extents required for the CMRDETL data sets by estimating the number of CICS transactions to be stored on a single data set.

If dual CMRDETL data sets are used, this is the expected number of transactions before a scheduled switch occurs. The secondary extent should be zero.

If you are using a single CMRDETL data set, this is the estimated number of transactions per day multiplied by the number of days your data remains online without being archived. Divide the primary record allocation by four to calculate the secondary record allocation.

For example, if an average of 20,000 transactions are run per day and you want to keep 2 days of data in CMRDETL, the primary allocation should be 40000 and the secondary allocation should be 10000.

Note: For optimum VSAM performance, the primary allocation for CMRDETL should not be less than one cylinder.

Step 5   Replace all occurrences of:

```
CMR.CMRV3
```

with:

prefix.cics_name

Define *cics_name* as the name of the CICS region. This statement creates a unique set of data sets for each CICS region.

Step 6   Replace all occurrences of:

```
CICSMGR
```

with:

prefix

Step 7   Replace all occurrences of:

```
??????
```

with the ID of the volume where the CMRDETL data sets are located.

Step 8   Replace:

```
RECORDS(15000 0)
```

with:

RECORDS(primary secondary)

Define *primary* and *secondary* as the primary and secondary record allocations for CMRDETL calculated in Step 4 on page 3-15.

Step 9   Submit the newly created job.

Step 10   Add a DD statement to UBBSAMP member SSJCL for each CMRDETL data set only if your site meets one of the following conditions:

- The site uses a single CMRDETL data set.
- The site does not dynamically allocate dual CMRDETL data sets.

If your site meets the listed conditions, add the DD statement shown below to your SSJCL member:

//*cics_name* **DD DSN=***prefix.cics_name***.CMRDETL,DISP=SHR**

Do not include the DD statement if your site uses dual data sets that are dynamically allocated.

Step 7: Specifying Dual CMRDETL Data Sets (Optional)

BBPARM member CMRDTL00 must be specified to use dual CMRDETL data sets. If the target CICS region is not defined in CMRDTL00, data set switching does not occur and the DDNAME is the name of the region.

CMRDTL00 contains the parameters described in the following procedure. Edit the parameters to specify the names and options for dual CMRDETL data set switching.

Step 1   Copy member CMRDTL00 from your BBPARM data set to your UBBPARM data set.

Step 2   Specify the name of a CICS region with the TARGET statement:

TARGET=*cics_name*

The CICS region is the source of the 6E and 6D detail transaction records stored on the CMRDETL data set.

Step 3   Specify the name of the primary CMRDETL data set with the DSN1 parameter:

DSN1=*prefix.cics_name*.CMRDETL1

Step 4   Specify the name of the secondary CMRDETL data set with the DSN2 parameter:

DSN2=*prefix.cics_name.CMRDETL2*

Step 5   Specify any additional parameters if you do not want to use the switching defaults.

The following parameters can be specified in CMRDTL00 to set the operating conditions of CMRDETL data sets:

TARGET=*tgt_name*   Specifies the name of the CICS region whose data is collected and stored on the associated dual CMRDETL data sets.

DSN1=*prime_dsn*   Define *prime_dsn* as the name of the primary CMRDETL data set. This name dynamically allocates the data set when it is required. After it is allocated, the data set is not freed until the BBI-SS PAS is terminated or the DSN1 statement is changed to another data set name and data collection is stopped and restarted.

> **Note:** The data set is allocated with a disposition of SHR. The data set must not be protected by VSAM password protection. RACF or equivalent security can be used as long as the BBI-SS PAS has access to the data set.

DSN2=*alt_dsn* Define *alt_dsn* as the name of the secondary CMRDETL data set. This name dynamically allocates the data set when it is required. After a data set is allocated, it is not freed until the BBI-SS PAS terminates or the DSN2 statement is changed to another data set name and data collection is stopped and restarted.

> **Note:** The data set is allocated with a disposition of SHR. The data set must not be protected by VSAM password protection. RACF or equivalent security can be used as long as the BBI-SS PAS has access to the data set.

DD1=*ddname* Define *ddname* as a name of a DD statement specified in the BBI-SS PAS startup JCL that should be used for DSN1. If both DD1 and DSN1 are specified, DD1 is the DD name used for dynamic allocation.

DD2=*ddname* Define *ddname* as a name of a DD statement specified in the BBI-SS PAS startup JCL that should be used for DSN2. If both DD2 and DSN2 are specified, DD2 is the DD name used for dynamic allocation.

CONTINUE=<u>YES</u>|NO Specifies whether data collection should resume on the CMRDETL data set that was active when recording stopped. The default is YES.

    YES Recording begins on the CMRDETL data set that was active when data collection stopped. An archive request is submitted when the data set becomes full.

    NO Recording begins on the CMRDETL data set that was inactive when data collection stopped. An archive request is submitted when the data set becomes full, when data collection stops, or when the BBI-SS PAS terminates normally. "Detail Data-Collection Scenarios" on page 5-2 gives an example of how the CONTINUE statement controls dual CMRDETL data set recording.

STOP=<u>YES</u>|NO Specifies whether data collection should stop when a data set switch occurs and the target data set contains data that has not been archived nor is scheduled for an archive. The default is YES, which prevents existing records from being overwritten by new data.

    NO Continue recording to the switched data set, regardless of existing records. If unarchived records are detected on the switched data set, an FT224 message is issued to warn of the possibility of existing records being overwritten.

YES   Terminates recording to the CMRDETL data set. Data collection must be stopped and restarted to reactivate dual CMRDETL recording.

> **Note:** Recording to CMRDETL cannot occur during an archive. If an archive has started and is not yet complete, the switch process allows two minutes for it to finish. Message FT226 indicates that an archive is in progress. After the two-minute period, data collection stops if the data set is still not available. Data collection can resume on the recently archived data set by stopping and restarting data collection.

ARCHJCL=<u>CMRDJCL</u>|*archjcl*|NONE

Specifies the name of the started task that requests an archive of the CMRDETL data set (see "CMRDETL Data Set Switch Exit" on page 5-5 for the format of the request). The default is CMRDJCL.

CMRDJCL   Default name of the archive request.

archjcl   Can be any valid started task name.

NONE   Indicates an archive request should not be submitted when a data set becomes full. NONE can be used when an automation product submits an archive request in response to messages or when data archival is not required.

> **Note:** Parameters can be changed during BBI-SS PAS execution but are activated only when data collection starts. Thus, if parameters are changed after data collection starts, they can be implemented only by terminating data collection and restarting it.

Parameter Syntax

Parameters must be coded with the following syntax conventions:

- The TARGET parameter must be coded first; all other parameters can be specified in any order.

- Parameters are free format, separated by commas or blanks, and can be continued on multiple lines.

- A parameter and its value must appear within a single statement and be coded without blank spaces.

- Comments are indicated by an asterisk (*) in column 1.

- To use only a single data set, specify DSN1 or DD1 with the CONTINUE=YES, STOP=NO options. This produces a wraparound data set.

Parameter Examples

The following examples show how to use BBPARM member CMRDTL00 parameters:

```
TARGET=CICSPROD,CONTINUE=YES,STOP=NO,
  DSN1=CICSPROD.DETAIL.FILE1,
  DSN2=CICSPROD.DETAIL.FILE2
*
TARGET=CICSTEST,
  DSN1=CICSTEST.DETAIL.FILE1,
  DSN2=CICSTEST.DETAIL.FILE2
*
TARGET=CICSTST,
DSN1=CICSTST.DETAIL.FILE,CONTINUE=YES,STOP=NO
```

The following example shows how to use data definitions in the PAS startup JCL:

```
TARGET=CICSPROD,CONTINUE=YES,STOP=NO,
  DSN1=CICSPROD.DETAIL.FILE1,
  DD1=MYDETL1
  DSN2=CICSPROD.DETAIL.FILE1,
  DD2=MYDETL2
```

For more information about how to use these parameters, see "Detail Data-Collection Scenarios" on page 5-2.

Standard implementation for MAINVIEW for CICS is complete. Optional customization, as described in Chapter 4, "Optional Implementation Procedures," can be performed to adjust MAINVIEW for CICS to your site's requirements.

Chapter 4   Optional Implementation Procedures

This chapter describes optional procedures to customize MAINVIEW for CICS macros that specify

- monitoring conditions
- problem threshold levels
- transaction threshold levels

Separate sections describe procedures to

- implement SAP transaction monitoring
- implement dynamic target support
- customize AutoOPERATOR for CICS

You can install and run MAINVIEW for CICS and MAINVIEW AutoOPERATOR for CICS as delivered. Monitoring with sample system modules (macros) can begin immediately without customization. Default threshold values are assigned to messages. No default threshold values are assigned to transactions.

If you want to make changes to the monitoring conditions or change the value of a message or transaction threshold, modify the macros according to the procedures described in this chapter.

Setting Monitoring Conditions (CMRSOPT)

The CMRSOPT macro adapts MAINVIEW for CICS monitoring to your specific CICS environment. After CMRSOPT is assembled and linked, the resulting module is a multi-purpose startup table that specifies

- monitored resources (terminals, transactions, or files)

- sampling periods and data collection intervals used for storing data on the CMRDETL and CMRSTAT data sets

- thresholds of system wide response time service levels

- data collection routines for supported fourth generation languages (4GLs) and database management systems

Note: By default, MAINVIEW for CICS monitoring begins at PLT startup according to the parameters you specify with the CMRSOPT macro. If you want to manually start MAINVIEW for CICS monitoring, refer to Appendix D, "Manual Control of Automated Functions."

Modifying the CMRSOPT Macro

Use the following procedure to modify the CMRSOPT macro:

Step 1 Copy member CMRASM from BBSAMP to the UBBSAMP data set. Make sure the new member name conforms to your site's naming conventions.

Step 2 Edit the member created in Step 1. Read the comments in the member and then modify the JCL accordingly. Keep the following in mind:

- CMRSOPT must be assembled and linked into BBLINK or an authorized load library that is concatenated in front of BBLINK.

- CMRSOPT must be linked non-reentrant.

- You must include the BBSAMP data set in the assembler SYSLIB concatenation.

Step 3 Modify the sample CMRSOPT macro according to your site's monitoring requirements.

A sample of CMRSOPT is in member CMRUSOPT of your BBSAMP data set. CMRUSOPT can be used with its predefined values or it can be modified to adapt monitoring to your site's specific requirements.

Note: If you want to set the same monitoring conditions for all your CICS regions, name the load module CMRSOPT. If you need different monitoring conditions for each region, rename the load module to the name of the CICS region with which it is associated (for example, CICSPROD). CMRSOPT is the default name if there are no load modules with a region name.

The CMRSOPT macro contains three types of statements:

- TYPE=INITIAL
- TYPE=resource
- TYPE=FINAL

Each statement includes a group of parameters that specify characteristic monitoring conditions. The following sections describe each parameter associated with the three CMRSOPT statements.

Step 4 Submit the JCL. Check the job output to make sure all steps complete with a return code of 0.

Note: S106 abends can occur if the newly link-edited module causes the BBLINK data set to enter secondary extents and the active BBI-SS PAS attempts to load the module. If this happens, stop the BBI-SS PAS and restart it.

TYPE=INITIAL Statement (Default Conditions)

The TYPE=INITIAL statement includes parameters that set the default global monitoring conditions for all CICS regions. Parameters are grouped by

- default monitoring conditions
- databases and fourth-generation languages (4GLs)
- additional data types
- SMF monitoring conditions

Default Monitoring Conditions

This section describes parameters that set the global default monitoring environment for MAINVIEW for CICS.

START=<u>YES</u>|NO Specifies whether data collection begins when a PLT entry activates MAINVIEW for CICS at CICS startup (see "Step 3: Modifying the PLT" on page 3-6). The default is YES.

> **YES** Starts data collection and establishes communication with the BBI-SS PAS.

> **NO** Data collection does not start when communication to the BBI-SS PAS is established. Data collection must be started manually with either the SMN2 transaction (from within CICS) or the FST2 transaction (from the MVS console).

CMRDETL=<u>YES</u>|NO Specifies whether detail transaction records are stored on the CMRDETL data set. The default is YES.

> **YES** Starts data collection and establishes communication with the BBI-SS PAS.

> **NO** Detail transaction records are not recorded on the CMRDETL data set. Data is still collected for online use such as graphics.

DTRACSIZ=<u>25</u>|*nnn* Specifies the maximum number of megabytes (MB) in the CICS data space to be used for detail tracing.

Valid values are 0 to 1024. A value of 0 means no detail tracing will be performed. The default is 25 MB.

The sum of the DTRACSIZ and STRACSIZ values cannot exceed 1024 MB.

DYNAMIC=<u>104</u>|*nnn* Specifies the maximum MVS storage (non-DSA) used by MAINVIEW for CICS in kilobytes (K).

Since MVS storage is obtained in 8 K increments, this value must be a multiple of 8 K. The default is 104 K.

This storage holds statistical data collected from DB2 plan activity. If the DB2=YES parameter is specified, at least 16 K must be specified with the DYNAMIC parameter. On average, 24 K of record data is collected for every 100 DB2 plans. Sufficient MVS storage must be available to accommodate MAINVIEW for CICS as well as other users (for example, VSAM and other program products).

EXCLUDE=<u>YES</u>|NO   Specifies whether a CICS transaction should be excluded from monitoring. The default is NO.

    YES   Specified CICS transactions will not be monitored.

    NO   All transactins are monitored.

        If you specify YES, an entry must be made in the CMRSOPT table that identifies the transactions to be excluded from monitoring:

```
TYPE=EXCLUDE,NAME=(FIC2, CE+F, CSA*)
```

        Note: Excluded transactions cannot be traced or graphed.

FILEOUT=<u>YES</u>|NO   Specifies whether CICS file and database usage are included in a transaction detail record. The default is YES.

    YES   Detail records include CICS file and database usage for each transaction.

    NO   Detail records do not include a transaction's CICS file and database usage. NO uses less DASD space, but data is not collected for individual file activity.

FILEXPND=<u>NO</u>|YES   Specifies whether expanded file information should be collected and written to the CMRDETL history data set. The default is YES.

    NO   Expanded file information is not collected.

    YES   Expanded file information is collected and stored in a Type 6E detail record. The expanded information includes volume serial numbers and counts of I/O activities such as reads, writes, adds, and deletes for each file.

        If you specify FILEXPND=YES, the MAXFILE parameter is limited to a maximum of 40 files.

GPERIOD=<u>15</u>|*nn*   Defines the cycle interval for graph frames (bars) in minutes.

        Valid values are 2 to 30. The default is 15 minutes.

MAXFILE=<u>20</u>|*nnn*   Specifies the maximum number of database and file names included in a CMRDETL record.

        Valid values are 20 to 255. If you specify FILEXPND=YES, the maximum value is 40. The default is 20.

        When you specify the MAXFILE parameter, you must also specify FILEOUT=YES (the default).

Increasing the potential number of database and file names that can be included in a 6E or 6D transaction detail record may affect the amount of required DASD storage allocated for the CMRDETL data set. Each file entry increases the size of a detail record by 16 bytes (FILEXPND=NO) or 216 bytes (FILEXPND=YES). The record size of a CMRDETL data set should be increased to accommodate larger average sized 6D and 6E detail records. Sample member CMRDDTL of your BBSAMP data set contains the following statement as part of an IDCAMS command to define the CMRDETL data set.

```
RECORDSIZE(380 12256)-
```

The first number within the parentheses, 380, is the default average size of a detail record. The second number reflects the maximum size of a CMRDETL data set record.

With experience, you should be able to estimate the average number of files included in a typical transaction detail record. You may want to change the default average record size to more accurately reflect your site's conditions. You can avoid frequent CMRDETL set switching when the average is too small. You can avoid infrequent switching when the average record size is too large also.

"Step 6: Specifying CMRDETL Data Sets (Optional)" on page 3-14 describes the procedure to define CMRDETL data sets.

MAXLOST=<u>256</u>|*nnnnn* Specifies the number of detail transaction records that can be lost before MAINVIEW for CICS stops collecting data because of insufficient queue space.

Valid values are 1 to 32767. The default is 256.

MAXLOSTT=<u>256</u>|*nnnnn*

Specifies the number of detail trace records that can be lost before application tracing is quiesced because of insufficient queue space.

Valid values are 1 to 32767. The default is 256.

MAXRESP=<u>null</u>|*nnn* Defines the maximum acceptable transaction response time service level in tenths of a second. This is the default for all transactions.

Valid values are 1 to 999. The default is null.

NTGRAPH=<u>NO</u>|YES Specifies whether non-terminal attached transactions are included in the Graph Global System display. The default is NO.

   NO   Only terminal attached transactions are included.

YES	Terminal attached and non-terminal attached transactions are included.

STRACSIZ=<u>25</u>|*nnn* Specifies the maximum number of megabytes (MB) in the CICS data space to be used for summary tracing.

Valid values are 0 to 1024. A value of 0 means no summary tracing will be performed. The default is 25 MB.

The sum of the STRACSIZ and DTRACSIZ values cannot exceed 1024 MB.

USENETNM=<u>NO</u>|YES Specifies whether the netname should be used in MAINVIEW for CICS displays and tracing. The default is NO.

NO	Netname is not used in displays and tracing.
YES	Netname appears in the History Summary and CICS Trace Entries displays. In addition, CICS traces can be initiated based upon the netname.

WAITINT=<u>010</u>|nnn Specifies the frequency, in hundredths of a second, with which MAINVIEW for CICS checks for

- CICS regions that have started or stopped
- BBI-SS PAS termination requests

Valid values are 010 to 999. The default is 100 (1 second).

Databases and Fourth-Generation Languages (4GLs)

This section describes parameters for the databases and 4GLs that can be monitored by MAINVIEW for CICS.

Note: CMRSOPT no longer includes parameters for the following data bases and 4GLs:

- Adabas
- DATACOM/DB
- GENER/OL
- Natural
- SUPRA
- SYS2K

Support for these applications is provided by user exits in the BBSAMP data set. For a list of BBSAMP members, see Appendix F, "BBSAMP Data Set Members."

CSP=<u>NO</u>|YES[,CSPPGM=<u>CSP0001</u>|*xxxxxxx*]

Specifies monitoring of the IBM Cross System Product (CSP) panel. The default is NO.

    CSPPGM
Specifies the name of the IBM-supplied CSP control/driver program specified in the PCT entry for the CSP main transaction. If CSPPGM is used, CSP also must be specified.

DB2=<u>YES</u>|NO
Specifies monitoring of the DATABASE 2 (DB2) system.

    YES
DB2 plans are monitored. The default.

    NO
DB2 plans are not monitored.

DMS=<u>NO</u>|YES
Specifies monitoring of the DMS (Development Management System) panel. The default is NO.

DMSOFF=<u>124</u>|114
Specifies the offset of the DMS program name in the transaction work area for specific releases of DMS. The default is 124.

If you have this	Do this
DMS version 1.4 or earlier	Specify: **DMSOFF=124**
DMS version 1.5 or later	Specify: **DMSOFF=114**

IDEAL=<u>NO</u>|YES
Specifies monitoring of the CA-IDEAL panel. The default is NO.

MANTIS=<u>NO</u>|*n.n*[,MANPGM=<u>MANTIS</u>|*xxxxx*]

Specifies monitoring of the Mantis panel. The default is NO.

Define *n.n* as one of the following versions of Mantis:

- MANTIS=4.0
- MANTIS=4.2 (also valid for version 4.25)
- MANTIS=5.2 (also valid for version 5.25)

    MANPGM
Specifies the name of the distributed Mantis module, where *xxxxxx* is the name specified in the PROGRAM parameter of the PCT entry for the Mantis transaction. If MANPGM is used, MANTIS must also be specified.

MILLEN=<u>NO</u>|YES[,MILPGM1=<u>MILLMDIO</u>|*xxxxxxxx*] [,MILPGM2=<u>M2LLMDIO</u>|*xxxxxxxxx*]

Specifies monitoring of the Millennium panel. The default is NO.

    NO
Millennium monitoring is not activated.

    YES
Millennium monitoring is activated

MILPGM1   Specifies the name of the distributed Millennium module, where *xxxxxxxx* is the name specified in the PROGRAM parameter of the PCT entry for the Millennium transaction. If MILPGM1 or MILGM2 is used, MILLEN also must be specified.

MILPGM2   Specifies the name of an additional, optional Millennium module.

PCS=NO|YES[,PCSPGM=DOCSCMAN|*xxxxxxxx*] [,PCSOFF=0220|*nnnn*]

Specifies monitoring of the PCS (Patient Care System) panel. The default is NO. If PCSPGM or PCSOFF is used, PCS also must be specified.

PCSPGM   Specifies the name of the distributed PCS, where *xxxxxxxx* is the name specified in the PROGRAM parameter of the PCT entry for the PCS transaction.

PCSOFF   Specifies the offset of the screen name (TWASCNAM) in the PCS transaction work area (TWA). Obtain the offset from an Assembly listing of DOCSCMAN. Specify the PCSOFF value as a four-byte hexadecimal with leading zeroes.

UFO=NO|*n.n*[,UFOPGM=UFOFASTM|*xxxxxxxx*]

Specifies monitoring of the UFO panel. The default is NO.

Define *n.n* as one of the following versions of UFO:

- UFO=2.4
- UFO=2.5
- UFO=2.6
- UFO=3.0 (version 3.0 and above)

Note: UFO version 3.0 and above is supported by the UFO accounting exit. To activate this support, CMRUFOX must be specified in the UFOINIT parameter ACCEXIT (see your UFO customization guide for more information). For this support to be available, UFO version 3.0 must be at maintenance level 3.0.94 or PTFs UF30052 and UF30071 must be applied.

UFOPGM   Specifies the name of the distributed UFO module, where *xxxxxxxx* is the name specified in the PROGRAM parameter of the PCT entry for the UFO transaction. If UFOPGM is used, UFO also must be specified.

Additional Data Types

This section describes parameters that can be used to specify monitoring of additional data types.

BMS=YES|NO   Activates an intercept to collect data from the BMS map set.

DLICLK1=<u>0</u>|*n*   Identifies the first of four DL/I user clocks to be monitored, as specified in the DFHMCT TYPE=EMP entry.

Subsequent user clocks must be contiguous. A value of 0 indicates no DL/I measurement. When it is used in CMRUSOPT, the default is 1.

DLICLKN=<u>0</u>|*n*   Identifies the last DL/I user clock to be monitored.

The default is 0 or the DLICLK1 value + 3, if DLICLK1 is specified. When it is used in CMRUSOPT, the default is 1.

DLICNT1=<u>0</u>|*n*   Identifies the first of 10 user counters to be applied to the DL/I clocks, as specified in the DFHMCT TYPE=EMP entry.

Subsequent user counters must be contiguous. A value of 0 indicates no DL/I measurement.

DLICNTN=<u>0</u>|*n*   Identifies the last of 10 user counters to be applied to the DL/I clocks.

The default is 0 or the DLICNT1 value + 9, if DLICNT1 is specified.

PSB=<u>YES</u>|NO   Activates an intercept to collect DL/I PSB data.

SERVICE=(x1,...,x17)   Sets a system-wide range of transaction response time service levels that are used by the CMRSTAT type 1C record and service level graphs (fields 114-125, 205, 210). Values are expressed in tenths of a second.

Valid values are 1 to 999. Service levels must be specified in ascending order. The default is

SERVICE=(5,10,15,20,25,30,40,50,60,70,80,90,100,200,300,600,900)

Up to 17 service levels can be specified. When less than 17 are specified, the CMRSOPT macro increments the remaining unspecified values by 10.

SMF Data Recording

This section describes parameters that are used to set conditions for recording data to the CMRSTAT and SMF data sets.

T6F=<u>YES</u>|NO   Specifies whether global performance (6F) records are written to the SMF data set. The default is YES.

CSA=<u>60</u>|*nnn*   Specifies the interval in minutes for recording CICS system statistics to the SMF data set. Includes dispatcher statistics.

Valid values are 0 to 999. If zero is specified, CICS system statistics are not recorded.

DCT=<u>60</u>|*nnn*   Specifies the interval to record destination control table statistics to the SMF data set.

Valid values are 0 to 999 minutes. If zero is specified, destination control statistics are not recorded.

DLZ=<u>60</u>|*nnn*   Specifies the interval to record DL/I system statistics to the SMF data set.

Valid values are 0 to 999 minutes. If zero is specified, DL/I system statistics are not recorded.

DMP=0|*nnn*   Specifies the dump statistics collection interval. These statistics include system and transaction dump information. The default is 0, which means statistics are not collected.

Valid values are 0 to 999 minutes. If zero is specified, destination control statistics are not recorded.

The CICS request is:

```
EXEC CICS PERFORM STATISTICS REORD SYSDUMP TRANDUMP
```

ENQ=0|*nnn*   Enque statistics collection interval (CTS 1.1, 1.2, 1.3, 2.1). The default is 0, which means statistics are not collected.

Valid values are 0 to 999 minutes. If zero is specified, destination control statistics are not recorded.

FCT=<u>60</u>|*nnn*   Specifies the interval to record file control statistics to the SMF data set.

Valid values are 0 to 999 minutes. If zero is specified, file control statistics are not recorded.

FEPI=0|*nnn*   Specifies the FEPI statistics collection interval. The default is 0, which means statistics are not collected.

Valid values are 0 to 999 minutes. If zero is specified, file control statistics are not recorded.

GNI=<u>0</u>|*nnn*   Specifies the interval to record global network statistics to the SMF data set.

Valid values are 0 to 999 minutes. If zero is specified, global network statistics are not recorded.

IRC=<u>0</u>|*nnn*   Specifies the interval to record IRC/ISC (inter-region and intersystem connection) statistics to the SMF data set.

Valid values are 0 to 999 minutes. If zero is specified, IRC/ISC statistics are not recorded.

JCT=<u>60</u>|*nnn*   Specifies the interval to record journal control table statistics to the SMF data set. Includes log stream statistics (not for CICS 4.1).

Valid values are 0 to 999 minutes. The default is 60 minutes. If zero is specified, journal control table statistics are not recorded.

LTX=<u>60</u>|*nnn*   Specifies the interval to record service level statistics to the SMF data set.

Valid values are 0 to 999 minutes. The default is 60 minutes. If zero is specified, service level statistics are not recorded.

MON=0|*nnn*   Specifies the monitor statistics collection interval. The default is 0, which means statistics are not collected.

Valid values are 0 to 999 minutes. If zero is specified, file control statistics are not recorded.

OTHR=0|*nnn*   Specifies the other statistics collection interval. These statistics include recovery manager, statistics domain, and table manager information. The default is 0, which means statistics are not collected.

Valid values are 0 to 999 minutes. If zero is specified, file control statistics are not recorded.

The CICS request is:

```
EXEC CICS PERFORM STATISTICS RECORD RECOVERY STATS
TABLEMGR
```

PAM=<u>60</u>|*nnn*   Specifies the interval to record DSA or page allocation map statistics to the SMF data set.

Valid values are 0 to 999 minutes. The default is 60 minutes. If zero is specified, DSA or page allocation map statistics are not recorded.

PCT=<u>60</u>|*nnn*   Specifies the interval to record program control table statistics to the SMF data set.

Valid values are 0 to 999 minutes. The default is 60 minutes. If zero is specified, program control table statistics are not recorded.

POL=<u>0</u>|*nnn*   Specifies the interval to record Local Shared Resource (LSR) pool statistics to the SMF data set.

     Valid values are 0 to 999 minutes. The default is 0. If zero is specified, LSR pool statistics are not recorded.

PPT=<u>60</u>|*nnn*   Specifies the interval to record processing program table statistics to the SMF data set. Includes program auto-install statistics.

     Valid values are 0 to 999 minutes. The default is 60 minutes. If zero is specified, processing program table statistics are not recorded.

RCT=<u>60</u>|*nnn*   Specifies the interval to record DB2 Plan activity to the SMF data set.

     Valid values are 0 to 999 minutes. The default is 60 minutes. If zero is specified, DB2 Plan activity statistics are not recorded.

STI=<u>0</u>|*nnn*   Specifies the interval to record System Initialization Table (SIT) statistics to the SMF data set.

     Valid values are 0 to 999 minutes. The default is 0. If zero is specified, SIT statistics are not recorded.

TCT=<u>60</u>|*nnn*   Specifies the interval to record Terminal Control Table (TCT) statistics to the SMF data set.

     Valid values are 0 to 999 minutes. The default is 60 minutes. If zero is specified, TCT statistics are not recorded.

TST=<u>60</u>|*nnn*   Specifies the interval to record temporary storage table statistics to the SMF data set.

     Valid values are 0 to 999 minutes. The default is 60 minutes. If zero is specified, temporary storage table statistics are not recorded.

WEB=0|*nnn*   Specifies web statistics collection interval. The default is 0, which means statistics are not collected.

     Valid values are 0 to 999 minutes. If zero is specified, file control statistics are not recorded.

TYPE=resource Statement (Optional)

The TYPE=resource statement identifies

- monitored resources displayed in online graphs
- type of monitor area used
- default maximum response time (service level)

Multiple TYPE=resource statements can be specified in CMRSOPT. The TYPE=resource statements included as examples in the CMRUSOPT sample member monitor only files and transactions. Unless these statements are changed, only graphs from these sources are produced.

The TYPE=resource statement specifies the type of resource that is monitored. Valid parameters used with this statement are as follows:

Parameter	Resource Type
TYPE=FILE	Files and databases
TYPE=TRAN	Transactions
TYPE=TERM	Terminals
TYPE=PANEL	4GL panels
TYPE=MAP	BMS map set names
TYPE=PSB	DL/I PSB names

Additional parameters included with TYPE=resource statements specify how these resources are monitored.

Typically, several parameters are used with the TYPE=resource statement, as shown in the following example:

```
TYPE=resource,NAME=group,MONITOR=class,MAXRESP=nnn
```

NAME=ALL|*name*   Names the monitored resource group.

    ALL   Specifies all resources corresponding to the defined TYPE are monitored. As each new resource is executed, it is added dynamically to the monitor table. Virtual storage is acquired for that resource's statistical counts. If ALL is specified, it must precede all other entries for the same resource type.

    name   Identifies the specific or generic name of a resource to be monitored. This can be used to set specific service levels or to produce a single monitored entry for a group of generic entries.

The resource names must be specified in ascending sequence following the NAME=ALL parameter, if it is present. Generic entries include minus signs (-) to indicate positions not included in the comparison. If a generic resource name matches a specific entry, the resource statistics are recorded in the specific entry.

MONITOR=<u>MEDIUM</u>|DL/I|FILE|LONG

Defines the monitoring class. Storage for monitoring classes is acquired in extended private storage for the BBI-SS PAS address space. The following estimates are per monitored resource. Valid values and the amount of virtual storage required for each class are as follows:

MEDIUM   Keep timings only (1358 bytes).

DL/I   Keep timings and usage counts plus DL/I timings and counts (3428 bytes).

FILE   Used only with file monitor (228 bytes).

LONG   Keep timings and usage counts (2758 bytes).

MAXRESP=*nnn*   Sets an individual response time service level for a resource defined with the TYPE=resource statement. It overrides the default service level set by the MAXRESP parameter of the TYPE=INITIAL statement.

It applies only to the resource type being used. Valid values are 1 to 999 and represent tenths of a second; for example, 245 is 24.5 seconds. When MONITOR=FILE is specified, the value represents milliseconds.

The following examples show the use of TYPE=resource statements for CICS transactions:

```
CMRSOPT TYPE=TRAN,NAME=ALL,MAXRESP=10,MONITOR=MEDIUM
```

All transactions are added dynamically to the monitor table, given a service level of 1.0 seconds, and use a medium monitor area.

```
CMRSOPT TYPE=TRAN,NAME=C---,MAXRESP=15,MONITOR=MEDIUM
```

All transactions that begin with C are combined and stored into a single entry (C---) with a service level of 1.5 seconds, and use a medium monitor area.

```
CMRSOPT TYPE=TRAN,NAME=CEMT,MAXRESP=20,MONITOR=LONG
```

CEMT monitoring statistics are collected with a service level of 2.0 seconds and a long monitor area.

```
CMRSOPT TYPE=TRAN,NAME=MENU,MAXRESP=5,MONITOR=DL/I
```

MENU monitoring statistics are collected with a service level of 0.5 seconds and a DL/I monitor area.

TYPE=FINAL Statement (Required)

The TYPE=FINAL statement ends option generation. A TYPE=FINAL statement must be included in CMRSOPT.

Resetting the CMRSOPT Macro

CMRSOPT can be reset dynamically with the RESET command:

```
.RESET PARM CMRSOPT ALL
```

Resets monitoring options for all CICS regions.

```
.RESET PARM CMRSOPT cicsname
```

Resets monitoring options that apply to a specific CICS region.

Data collection is stopped momentarily during CMRSOPT reset. See the *MAINVIEW Administration Guide* for more information about the RESET command and its parameters.

Setting Problem Thresholds (CMRPRBT)

The MAINVIEW for CICS online PROBLEM service displays messages in response to monitored conditions or resources that exceed a series of predefined thresholds. Each threshold represents the upper limit of a range of measurable values. The color of a message indicates whether an informational, a warning, or a severe threshold has been exceeded.

This section explains how to set problem thresholds with the CMRPRBT macro. This macro generates a problem message threshold table. Each table entry consists of a message number followed by the thresholds that trigger the display of informational, warning, and severe messages.

Modifying the CMRPRBT Macro

All MAINVIEW for CICS problem messages are located in the BBMLIB data set with a separate member for each message. The members are named by message number.

Only the messages listed in CMRPRBT can have their thresholds modified. MAINVIEW for CICS issues a number of problem messages that do not require thresholds; for example, FT056 CURRENTLY AT ACTIVE MAXIMUM TASK CONDITION. These messages are not listed in CMRPRBT.

To modify CMRPRBT, do the following:

Step 1   Edit sample member CMRUPRBT in your BBSAMP data set to set message thresholds.

Step 2   Edit the TARGET parameter to include the CICS regions whose messages you want to set thresholds for:

TARGET=(*name1,name2,...,namen*,|*)

Thresholds apply to the messages generated by the CICS regions specified with the TARGET parameter. An asterisk (*) indicates that message thresholds apply to all unspecified CICS regions.

MAINVIEW for CICS uses the first TARGET parameter to set message thresholds for unspecified regions if a TARGET=* parameter is not included in CMRPRBT. For example, if CMRPRBT TARGET statements are coded in order as:

```
CMRPRBT  TARGET=(CICS1,CICS2),
FT033=(200,300,400),
FT034=(10,40,60),
.....
CMRPRBT  TARGET=(CICSTST,CICSPROD),
FT033=(100,200,300),
FT034=(80,100,200),
.....
```

The thresholds for CICS1 and CICS2 apply to CICS3 because it is an unspecified region.

Step 3   Edit the FTnnn message statements to change the default message thresholds.

The format of the FTnnn statement is as follows:

FT*nnn*=(*aaaaaa*,*bbbbbb*,*cccccc*)

The variable, FT*nnn*, represents the message number. The values within parentheses, *aaaaaa*, *bbbbbb*, and *cccccc*, represent thresholds:

aaaaaa   Informational message threshold.

bbbbbb   Warning message threshold.

cccccc   Severe message threshold.

Threshold values for count messages are specified as integers. The following example demonstrates how message thresholds are specified for counts:

```
FT041=(32,100,200)
```

* An informational message is issued when the task uses more than 32 K of DSA.

* A warning message is issued when the task uses more than 100 K of DSA.

* A severe message is issued when the task uses more than 200 K of DSA.

Percent and time thresholds are expressed as integers without a decimal point. A zero is added as the low-order number. The following example demonstrates how message thresholds are specified for percent thresholds:

```
FT046=(500,750,900)
```

* An informational message is issued when CICS uses more than 50.0% of CPU resources.

- A warning message is issued when CICS uses more than 75.0% of the CPU.

- A severe message is issued when CICS uses more than 90.0% of the CPU.

3.A Optionally, decrease the CPU utilization of the CREGION view and the interval recorder by limiting the scope of region problem count collection.

To stop CREGION and interval recorder collection of problem counts for storage violations (FT066 and FT088), add an 'N' as the fourth parameter to their Problem Threshold Table entries for the FT066 message. An example of the MACRO parameter:

```
FT066=(0,10,20,N), STORAGE VIOLATIONS        X
```

Similarly, to stop collection of problem counts for program loads (FT099), add an 'N' as the fourth parameter to the entries for the FT099 message. An example of the MACRO parameter:

```
FT099=(25,50,100,N), TIMES PROGRAM FETCHED X
```

Step 4 Optionally, change the default color for a type of message by editing the following statements:

```
.
SEVERE=RED,
WARN=BLUE,
INFO=GREEN,
.
```

Reassign a different color to a message type by placing the name of a color after the equal sign in a statement. MAINVIEW for CICS supports the following colors:

- Red
- White
- Blue
- Green

Step 5 Optionally, exclude messages from being displayed with the PROBLEM service if you think they represent insignificant events.

5.A Locate the following statements:

```
XTRAN=(' ',' ',' ',' ',' ',' ',' ',' ',' ',' '),
XFILE=(' ',' ',' ',' ',' ',' ',' ',' ',' ',' '),
```

The XTRAN and XFILE statements specify which transactions or CICS files should be excluded from appearing with the PROBLEM service, even if their thresholds are exceeded.

5.B Enter the name of a transaction or file within the parentheses of the appropriate XTRAN or XFILE statement. Include single quotes around each transaction or file name and separate them with a comma (for example, 'file_name1','file_name2').

Both statements support the generic "+" and "*" parameters.

Step 6 Use sample JCL in BBSAMP member CMRASM to assemble and link the CMRUPRBT source module.

6.A Copy member CMRASM from BBSAMP to the UBBSAMP data set. Make sure the new member name conforms to your site's naming conventions.

6.B Edit the member created in the previous step. Read the comments in the member and then modify the JCL accordingly. Keep the following in mind:

- CMRPRBT must be assembled and linked into BBLINK or an authorized load library that is concatenated in front of BBLINK.

- CMRPRBT must be linked reentrant.

- You must include the BBSAMP data set in the assembler SYSLIB concatenation.

6.C Submit the JCL. Check the job output to make sure all steps complete with a return code of 0.

Note: S106 abends can occur if the newly link-edited module causes the BBLINK data set to enter secondary extents and the active BBI-SS PAS then attempts to load the module. If this happens, stop the BBI-SS PAS and restart it.

Resetting the CMRPRBT Macro

The CMRPRBT table can be reset dynamically with the following command:

.RESET PARM CMRPRBT

Refer to the *MAINVIEW Administration Guide* for a description of the RESET control command and supported parameters.

Setting Transaction Thresholds (CMRTTHR)

The CMRTTHR macro can be used to set resource thresholds for your CICS transactions. After CMRTTHR is assembled and linked, the resulting module is used by the MAINVIEW for CICS task kill exit (CMRXEIO) to cancel tasks if they exceed their resource thresholds.

Note: The task kill exit can be started

- automatically at PLT startup using the KILLEXIT parameter (as described in "Step 3: Modifying the PLT" on page 3-6)

- manually using the XEIO transaction (as described in Appendix D, "Manual Control of Automated Functions")

Modifying the CMRTTHR Macro

As distributed, CMRTTHR specifies no threshold values. The default value for each resource threshold is 0, which means there is no limit to a task's use of that resource. To establish resource thresholds for your transactions, you must modify the CMRTTHR macro as described in this section.

To modify CMRTTHR, do the following:

Step 1 Copy member TTHRJCL from BBSAMP to UBBSAMP. Make sure the new member name conforms to your site's naming conventions.

Step 2 Edit the member created in Step 1. Read the comments in the member and then modify the JCL accordingly. Keep the following in mind:

- CMRTTHR must be assembled and linked into BBLINK or an authorized load library that is concatenated in front of BBLINK.

- You must include the BBSAMP data set in the assembler SYSLIB concatenation.

Step 3 Modify the sample CMRTTHR macro according to your site's requirements. A sample of CMRTTHR is in member CMRUTTHR of your BBSAMP data set.

The CMRTTHR macro contains three types of statements:

- TYPE=INITIAL
- TYPE=ENTRY
- TYPE=FINAL

The following sections describe each parameter associated with the CMRTTHR statements.

Step 4   Submit the JCL. Check the job output to make sure all steps complete with a return code of 0.

> **Note:**   S106 abends can occur if the newly link-edited module causes the BBLINK data set to enter secondary extents and the active BBI-SS PAS attempts to load the module. If this happens, stop the BBI-SS PAS and restart it.

TYPE=INITIAL Statement (Default Conditions)

The TYPE=INITIAL statement includes parameters that set the default threshold conditions for all CICS transactions, including the threshold values, abend codes, and dump option.

TARGET=*name*|(*name1,name2,...*)|*)

Identifies the CICS regions whose transactions you want to set thresholds for. An asterisk (*) indicates the transaction thresholds that follow apply to all unspecified CICS regions. If used, the asterisk (*) value must be the last value listed; values listed after the asterisk are ignored.

If a TARGET=* parameter is not included in CMRTTHR, the first TARGET parameter is used to set transaction thresholds for any unspecified regions. For example, if TARGET statements are coded in order as follows:

```
CMRTTHR   TARGET=(CICS1,CICS2),...
.....
CMRTTHR   TARGET=(CICSTST,CICSPROD),...
.....
```

then the thresholds for CICS1 and CICS2 are used for any other CICS regions (such as CICS3) that are not explicitly named in a TARGET parameter.

DUMP=<u>NO</u>|YES   Indicates whether a dump is requested when CMRXEIO cancels a task. The default is NO.

    NO   No dump is requested for a task that is cancelled.

    YES   A dump is requested for a task that is cancelled.

CPUTIME=<u>0</u>|*nn*   Specifies the CPU TIME threshold for all transactions. This value, in tenths of a second, determines the maximum amount of CPU time that a task is allowed before it is cancelled. For example, CPUTIME=50 means each task is limited to 5 seconds of CPU time.

The default is 0 (no limit).

FILECALL=<u>0</u>|*nn*   Specifies the FILE CALL threshold for all transactions. This value determines the maximum number of file calls that a task can make before it is cancelled.

The default is 0 (no limit).

DBCALL=<u>0</u>|*nn*   Specifies the DB CALL threshold for all transactions. This value determines the maximum number of DB calls (including ADABAS, SUPRA, IDMS, and so forth) that a task can make before it is cancelled.

The default is 0 (no limit).

STGABOVE=<u>0</u>|*nn*   Specifies the STORAGE ABOVE threshold for all transactions. This value, in kilobytes, determines the maximum amount of storage above the 16 MB line that a task can use before it is cancelled.

The default is 0 (no limit).

STGBELOW=<u>0</u>|*nn*   Specifies the STORAGE BELOW threshold for all transactions. This value, in kilobytes, determines the maximum amount of storage below the 16 MB line that a task can use before it is cancelled.

The default is 0 (no limit).

STGTOTAL=<u>0</u>|*nn*   Specifies the STORAGE TOTAL threshold for all transactions. This value, in kilobytes, determines the maximum amount of total storage (above and below) that a task can use before it is cancelled.

The default is 0 (no limit).

ELAPSED=<u>0</u>|*nn*   Specifies the ELAPSED TIME threshold for all transactions. This value, in tenths of a second, determines the maximum amount of elapsed time that a task is allowed before it is cancelled. For example, `ELAPSED=120` means each task is limited to 12 seconds of elapsed time.

The default is 0 (no limit).

DB2=<u>0</u>|*nn*   Specifies the DB2 CALL threshold for all transactions. This value determines the maximum number of DB2 calls that a task can make before it is cancelled.

The default is 0 (no limit).

DBCTL=<u>0</u>|*nn*   Specifies the DBCTL CALL threshold for all transactions. This value determines the maximum number of DBCTL calls that a task can make before it is cancelled.

The default is 0 (no limit).

ABCP=<u>BBCP</u>|*code*   Specifies the abend code assigned to the CPU TIME threshold. If a task exceeds the CPU TIME threshold, it is cancelled with the specified abend code.

The default is BBCP.

ABFC=<u>BBFC</u>|*code*   Specifies the abend code assigned to the FILE CALL threshold. If a task exceeds the FILE CALL threshold, it is cancelled with the specified abend code.

The default is BBFC.

ABDB=<u>BBDB</u>|*code*   Specifies the abend code assigned to the DB CALL threshold. If a task exceeds the DB CALL threshold, it is cancelled with the specified abend code.

The default is BBDB.

ABEL=<u>BBEL</u>|*code*   Specifies the abend code assigned to the ELAPSED TIME threshold. If a task exceeds the threshold, it is cancelled with the specified abend code.

The default is BBEL.

ABSA=<u>BBSA</u>|*code*   Specifies the abend code assigned to the STORAGE ABOVE threshold. If a task exceeds the STORAGE ABOVE threshold, it is cancelled with the specified abend code.

The default is BBSA.

ABSB=<u>BBSB</u>|*code*   Specifies the abend code assigned to the STORAGE BELOW threshold. If a task exceeds the STORAGE BELOW threshold, it is cancelled with the specified abend code.

The default is BBSB.

ABST=<u>BBST</u>|*code*   Specifies the abend code assigned to the STORAGE TOTAL threshold. If a task exceeds the STORAGE TOTAL threshold, it is cancelled with the specified abend code.

The default is BBST.

TYPE=ENTRY Statement (Optional)

The TYPE=ENTRY statement and its parameters define resource thresholds for specific transactions. TYPE=ENTRY values override the default values for all transactions as specified on the TYPE=INITIAL statement. Any resource thresholds not specified in a TYPE=ENTRY statement for a given transaction retain their default values from TYPE=INITIAL.

TRANID=*tranid|(tranid,tranid,...)*

Identifies the transactions for which you want to set specific thresholds. You can use a single mask character (+) or a generic qualifier (*) to identify groups of transactions with similar names.

For example, `TRANID=T++A` includes all transactions with a first character of T and a last character of A. And `TRANID=T*` includes all transactions that begin with the letter T.

CPUTIME=<u>0</u>|*nn*

Specifies the CPU TIME threshold for the specified transactions. This value, in tenths of a second, determines the maximum amount of CPU time that a task is allowed before it is cancelled. For example, `CPUTIME=50` means each task is limited to 5 seconds of CPU time.

The default is 0 (no limit).

FILECALL=<u>0</u>|*nn*

Specifies the FILE CALL threshold for the specified transactions. This value determines the maximum number of file calls that a task can make before it is cancelled.

The default is 0 (no limit).

DBCALL=<u>0</u>|*nn*

Specifies the DB CALL threshold for the specified transactions. This value determines the maximum number of DB calls (including ADABAS, DATACOM, SUPRA, IDMS, and so forth) that a task can make before it is cancelled.

The default is 0 (no limit).

STGABOVE=<u>0</u>|*nn*

Specifies the STORAGE ABOVE threshold for the specified transactions. This value, in kilobytes, determines the maximum amount of storage above the 16 MB line that a task can use before it is cancelled.

The default is 0 (no limit).

STGBELOW=<u>0</u>|*nn*

Specifies the STORAGE BELOW threshold for the specified transactions. This value, in kilobytes, determines the maximum amount of storage below the 16 MB line that a task can use before it is cancelled.

The default is 0 (no limit).

STGTOTAL=<u>0</u>|*nn*   Specifies the STORAGE TOTAL threshold for the specified transactions. This value, in kilobytes, determines the maximum amount of total storage (above and below) that a task can use before it is cancelled.

The default is 0 (no limit).

ELAPSED=<u>0</u>|*nn*   Specifies the ELAPSED TIME threshold for the specified transactions. This value, in tenths of a second, determines the maximum amount of elapsed time that a task is allowed before it is cancelled. For example, ELAPSED=120 means each task is limited to 12 seconds of elapsed time.

The default is 0 (no limit).

DB2=<u>0</u>|*nn*   Specifies the DB2 CALL threshold for the specified transactions. This value determines the maximum number of DB2 calls that a task can make before it is cancelled.

The default is 0 (no limit).

DBCTL=<u>0</u>|*nn*   Specifies the DBCTL CALL threshold for the specified transactions. This value determines the maximum number of DBCTL calls that a task can make before it is cancelled.

The default is 0 (no limit).

TYPE=FINAL Statement (Required)

The TYPE=FINAL statement ends threshold generation. A TYPE=FINAL statement must be included in CMRTTHR.

History Parameters in BBIPROF (Optional)

BBIPROF member BDR#DEF contains information used by the history parameter sets.

BRD#DEF conains parameters in the form: KEYWORD VALUE . They can be in any order (except TIMESTAMP).

TIMESTAMP   The time stamp must appear on the first line. It can consist of any string.

MAXREC   The maximum number of records to return. The default is 5000.

DEFREC   If a parameter set does not have a record count, this number is used. The default is 1000.

MAXEXC   The maximum number of records to read that do not satisfy the parameter set's filter condition. The default is 10000

DEFEXC   The number of records to exclude. The default is 2000.

If BDR#DEF is missing, default values are used.

Implementing SAP Transaction Monitoring

This section describes optional steps for implementing SAP transaction monitoring. Using the CMRCUEX user exit program, MAINVIEW for CICS can receive SAP data from the SAPSTEC statistical monitoring exit. To implement SAP transaction monitoring, you must

- modify the CMRSOPT macro
- add code to the SAPSTEC exit
- activate the SAPSTEC exit

For details on using the CMRCUEX user exit, see Appendix H, "User Exit Interface (CMRCUEX)."

Modifying CMRSOPT

For the collection of SAP data to work properly, you must specify **TYPE=PANEL** in the CMRSOPT macro. For a description of this CMRSOPT parameter, see "TYPE=resource Statement (Optional)" on page 4-14.

Adding Code to SAPSTEC

MAINVIEW for CICS provides sample code that enables data to be passed from SAPSTEC to CMRCUEX. The code is contained in these BBSAMP members:

Member	Description
SAPCMROT	Passes the SAP internal transaction and report IDs from SAPSTEC through the CMRCUEX user exit program to MAINVIEW for CICS.
SAPCMRTW	Terminates any previously initiated clocks.
SAPCMRWT	Captures work area waits and issues a call to MAINVIEW for CICS to start timing the wait.

Each of these members contains Assembler code and instructions for adding the code to the SAPSTEC exit.

In addition, member SAPCMROW contains a complete sample of the SAPSTEC exit.

Activating the SAPSTEC Exit

Once you have added the code from the BBSAMP members to SAPSTEC, you are ready to activate the SAP statistical monitoring exit. For details on activating SAPSTEC, refer to your SAP documentation.

Implementing Dynamic Target Support

MAINVIEW for CICS supports dynamic target definitions, which allow you to move CICS region monitoring from one BBI-SS PAS to another without restarting the PAS. To implement dynamic target support, you must

- replace the static target definitions in each PAS
- enable dynamic target support for each PAS
- associate each CICS region with a PAS
- create target definitions

For a discussion of managing targets and target contexts, see the *MAINVIEW Administration Guide*.

Replacing Static Target Definitions

Targets defined in the BBPARM member BBIJNT00 are considered static definitions. They override dynamic targets for CICS regions with the same name. To prevent this from happening, you must do the following for each PAS that is to support dynamic targets:

Step 1   Remove any TARGET statements containing the TYPE=CICS parameter from member BBIJNT00.

Step 2   Add a dummy TARGET statement, as shown here:

TARGET=DUMMY,TYPE=CICS,SUBSYS=*subsys*

Define *subsys* as the subsystem identifier for the PAS. The word DUMMY can be specified as shown or it can be replaced with any one- to eight-character value, provided it is not the name of an existing CICS region. The dummy TARGET statement is required to load MAINVIEW for CICS functions at PAS initialization.

Note: If necessary, BBIJNT00 can include both a dummy TARGET statement and actual CICS TARGET statements for those CICS regions that do not need to be moved dynamically from PAS to PAS.

Enabling Dynamic Target Support

For each PAS that is to support dynamic targets, add the following new parameter to the BBPARM member BBISSP00:

DYNTGT=YES

This parameter enables dynamic targets. The default is DYNTGT=NO. If you do not specify DYNTGT=YES, dynamic targets are ignored.

Associating CICS Regions with PASs

For each CICS region that you want to move dynamically from PAS to PAS, you must identify the target PAS. You can do this in one of two ways:

•   Specify the system initialization (SIT) parameter INITPARM either in the SIT itself or in the CICS region's startup JCL.

For example, you could specify the following value as a SIT override:

INITPARM= (CMRFSET*n*= 'SUBSYS=*subsys*')

Define *n* as the release of CICS:

0	CTS 1.3
9	CTS 1.2
8	CTS 1.1
6	CICS/ESA 4.1

Define *subsys* as the subsystem identifier for the PAS.

• Add a TARGET statement to one of these UBBPARM members:

BMCICS00

> This member can contain TARGET statements only for CICS regions. The CICS region scans BMCICS00 for target definitions during initialization. The BBI-SS PAS does not process BMCICS00.

BBIJNT00

> This member can contain TARGET statements for both CICS regions and the BBI-SS PAS. Targets defined in BBIJNT00 are considered static definitions; they override dynamic target definitions for CICS regions with the same name.

Note: If you choose to add TARGET statements to a BBIJNT00 member, it should not be shared with any PASs. It can, however, be shared with other CICS regions.

To change the PAS that monitors the CICS region, you must change the subsystem specified on the INITPARM or TARGET statement and restart the CICS region. You need not restart the PAS.

Creating Target Definitions

To create target definitions, use the Plex Manager TGTDEF view and one of the following commands:

ADD

This command displays the ADD TARGET DEFINITION panel, which allows you to create or update a single target definition at a time.

GENERATE

This command automatically creates a target definition for each target that appears on the TGTACT (PLEX) view with a status of Active.

Dynamic target definitions are saved in BBPARM member BBMTXP00. They are appended to the end of an in-memory list of target definitions from BBIJNT00 when the dynamic target definition is installed (either when the CAS starts or when the TGTDEF INSTALL command is issued).

See the *MAINVIEW Administration Guide* for a description of the TGTDEF view and information about saving and installing dynamic target definitions.

Special Considerations

Note the following special considerations when using dynamically defined targets:

- If multiple target definitions are defined for the same CICS region, the first one found in the combined BBIJNT00/BBMTXP00 in-memory list is used.

- Target definitions specified in member BBIJNT00 override dynamic target definitions in BBMTXP00.

- Existing targets defined in BBIJNT00 cannot be modified from the TGTDEF view. If they are modified, the changes are ignored.

- Historical data is not available for inactive CICS regions that are defined dynamically.

- If a CICS region that is defined as a dynamic target is connected to a BBI-SS PAS when the PAS is cold-started, the CICS region will not automatically reconnect to the PAS. You must run the SMN2 transaction on the CICS region to reestablish communications. For more information, see Appendix D, "Manual Control of Automated Functions."

Customizing AutoOPERATOR for CICS

This section describes optional steps for customizing AutoOPERATOR for CICS to your site's requirements.

The steps described in this section are optional. The full range of AutoOPERATOR for CICS functions are available whether or not you choose to perform the following steps:

- customize terminal types eligible for broadcast messages
- limit CICS transient data queues eligible for rule processing

Customizing Terminal Types Eligible for Broadcast Messages (CAOTTAB)

When the AutoOPERATOR for CICS BROADCAST application is invoked, a list of all terminals eligible for the BROADCAST function is displayed. The following criteria must be met before a terminal is eligible for broadcasting:

- It must have a CICS status of INSERVICE.

- If it is a VTAM terminal, it must be currently acquired.

- Its model specification must match the specifications of the supplied terminal table.

Because the performance of terminals varies by model, you may need to customize the AutoOPERATOR for CICS terminal table to include the terminal types used at your site.

The CAOTTAB macro generates the AutoOPERATOR for CICS terminal table. The default table is distributed by BMC Software using the following CAOTTAB macro invocation:

```
CAOTTAB (L3277,R3277)
```

Any terminal type that can be specified for the CICS terminal definition operand TERMMODL can be specified for CAOTTAB.

The member TTABJCL in your BBSAMP data set contains sample JCL that can be used to assemble and link CAOTTAB.

To modify CAOTTAB, do the following:

Step 1 Copy TTABJCL from BBSAMP to UBBSAMP. Make sure the new member name conforms to your site's naming conventions.

Step 2 Edit the member created in the previous step. Read the comments in the member and then modify the JCL accordingly.

Step 3   Modify the sample invocation of the CAOTTAB macro to make all terminal
types eligible for BROADCAST messages.

Step 4   Submit the newly created JCL. Check the output to insure that all steps
complete with a return code of 0.

> **Note:**   S106 abends can occur if the newly link-edited module causes the
> BBLINK data set to enter secondary extents and the active BBI-SS
> PAS attempts to load the module. If this happens, stop the BBI-SS
> PAS and restart it.

Limiting CICS Transient Data Queues Eligible for Rule Processing (CAODTAB)

By default, AutoOPERATOR for CICS intercepts all data written to any
CICS extra partition transient data destination. It then runs its Rule Processor
definitions to determine if a particular message should be intercepted and
acted upon.

This is acceptable in a CICS system that does not send large amounts of user
data to its transient data destinations. However, performance can be affected
if there is a large volume of data traffic.

If your CICS regions have a large volume of transient data traffic and you
want to limit the names of the CICS transient data destinations that are
eligible for the Rule Processor message interception, use the CAODTAB
macro to generate a CICS transient data name table for AutoOPERATOR for
CICS.

When a CICS transient data name table has been generated, only messages
sent to one of the destinations defined within are passed to the
AutoOPERATOR Rule Processor application.

Any CICS extra partition transient data destination name defined at your site
can be specified for CAODTAB.

The member DTABJCL in your BBSAMP data set contains sample JCL that
can be used to assemble and link CAODTAB

To modify CAODTAB, do the following:

Step 1   Copy DTABJCL from BBSAMP to UBBSAMP. Make sure the new member
name conforms to site naming conventions.

Step 2   Edit the member created in the previous step. Read the comments in the
member and then modify the JCL accordingly.

Step 3   Modify the sample invocation of the CAODTAB macro to contain only the names of CICS transient data destinations for which messages are to be passed to the AutoOPERATOR Rule Processor application.

Step 4   Submit the newly created JCL. Check the output to insure that all steps complete with a return code of 0.

> **Note:** S106 abends can occur if the newly link-edited module causes the BBLINK data set to enter secondary extents and the active BBI-SS PAS attempts to load the module. If this happens, stop the BBI-SS PAS and restart it.

Chapter 5   Using Dual CMRDETL Data Sets

Dual CMRDETL data sets can be specified for each CICS region. Using dual data sets allows you to store detail transaction records almost continuously. The detail records can be archived from the inactive data set after recording switches to the other data set. Recording switches automatically from one data set to another as they become full or when a VSAM error occurs.

Use the FST2 transaction with the SWITCH option (FST2 SWITCH) to request manual switching. Typically, the FST2 transaction is issued by the MVS MODIFY command. The following example shows the MODIFY command being issued from SDSF to switch data sets:

```
/f cicsname,fst2 switch
```

The conditions to switch recording between CMRDETL data sets are specified in member CMRDTL00 of your BBPARM data set. The following example shows CMRDTL00 statements that set the switch conditions:

```
TARGET=TARGET1,CONTINUE=NO,STOP=YES,
DSN1=TARGET1.DETAIL.FILE1,
DSN2=TARGET1.DETAIL.FILE2
```

The TARGET statement identifies the CICS region that produces the detail transaction records stored on the dual CMDRDETL data sets. The DSN1 and DSN2 parameters specify the names of CMRDETL data sets.

The CONTINUE parameter specifies whether recording continues on the data set that was being used when data collection stopped or switches to the other data set.

The STOP parameter specifies whether recording begins on a switched data set when it contains unarchived data.

The remainder of this chapter shows how to use the CONTINUE and STOP parameters to control CMRDETL switching.

Detail Data-Collection Scenarios

This section gives examples that describe how to use the CONTINUE and STOP parameters to control switching between dual CMRDETL data sets.

Controlling Data Set Switching with CONTINUE=YES

Figure 5-1 shows that DSN1 and DSN2 contain data collected over a seven-day period.

Figure 5-1   Example of Dual CMRDETL Data Sets with Daily Data
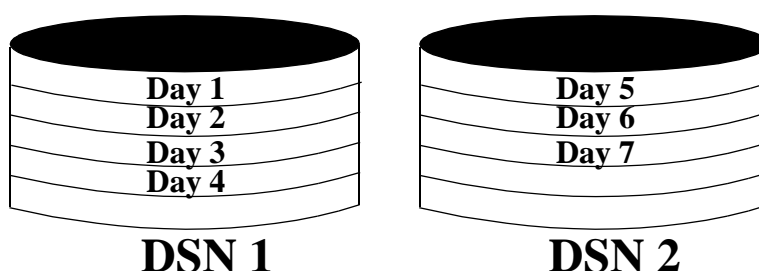
When data collection starts for a CICS region, MAINVIEW for CICS determines which data set was used last. DSN2 was the last data set used; thus, when CONTINUE=YES is specified in BBPARM member CMRDTL00, data collected on the eighth day is stored on DSN2. Recording continues on DSN2 until it becomes full. The CMRUSR01 user exit is invoked and a start command to archive DSN2 is issued (see "CMRDETL Data Set Switch Exit" on page 5-5, for the format of the archive request). An attempt is made to switch data collection to DSN1.

When DSN1 contains unarchived data, the value of the STOP parameter determines the next data collection step:

STOP=YES

> Data collection stops if unarchived data is present. It can be restarted after the data set is archived by stopping and restarting data collection.

STOP=NO

> Data is overwritten if archiving has not been specified for the data set.

If data has been archived, all existing DSN1 data (days 1 through 4) is deleted and detail collection starts from the beginning of the data set.

When the CICS region terminates or data collection is deactivated, the data set is closed and an archive request is not issued.

Controlling Data Set Switching with CONTINUE=NO

Figure 5-2 shows that DSN1 and DSN2 store data collected over a seven-hour period. DSN2 was the last data set used. Specifying CONTINUE=NO requests that data collection begin on DSN1; it was not being used when data collection stopped.

Figure 5-2   Example of Dual CMRDETL Data Sets with Hourly Data
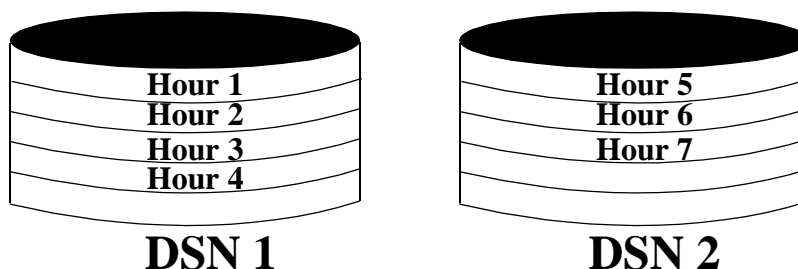
When data collection for the CICS region starts, MAINVIEW for CICS determines which of the data sets was used last and starts recording on the other data set (since it had more time to be archived). If DSN1 contains data that has not been archived, the STOP parameter determines the next data collection step:

STOP=YES

> Data collection stops. It can be restarted after the data set is archived by stopping and restarting data collection.

STOP=NO

> If the data set is not being archived and is not to be archived, data is overwritten.

If data has been archived, all existing DSN1 data (hours 1 through 4) is deleted.

Collection continues on DSN1 until it becomes full. The CMRUSR01 user exit is invoked and a start command to archive DSN1 is issued (see "CMRDETL Data Set Switch Exit" on page 5-5, for the format of the archive request).

An attempt is made to switch data collection to DSN2. If it has any unarchived data, the STOP options determine the action to be taken:

STOP=YES

> Data collection stops. It can be restarted after the data set is archived by stopping and restarting data collection.

STOP=NO

> If the data set is not being archived and is not to be archived, data is overwritten.

If data has been archived, all existing DSN2 data (hours 5 to 7) is deleted and detail data set collection starts at the beginning of the data set.

The data set is closed and an archive request is issued under the following conditions:

- CICS region becomes inactive
- data collection stops
- BBI-SS PAS becomes inactive

CMRDETL Data Set Switch Exit

The CMRUSR01 user exit is invoked when a CMRDETL data set becomes full. CMRUSR01 starts a task to archive CMRDETL data unless ARCHJCL=NONE is specified in CMRDETL00. The started task name is specified like this:

```
S CMRDJCL,CICS=cics_name,ARCHDSN='sample.data'
```

The exit is given the following parameters:

- BBI-SS PAS ID
- archive JCL name (ARCHJCL)
- CICS region name
- associated data set name

A sample of CMRUSR01 is provided in the BBSAMP data set. This sample can be edited and used if needed, but it is not recommended. BMC Software does not support any user changes made to CMRUSR01.

Dual Data Set Considerations

The following are some special considerations to keep in mind when using dual CMRDETL data sets:

- Data Set Switching Messages

  Data set switching messages can be seen by selecting the MESSAGES service or by browsing MSGLIB online.

- HISTORY Display of CMRDETL Data

  The online HISTORY service determines if an application request should read the current and/or alternate detail file.

- Batch Processing of CMRDETL Data Sets

  Batch jobs should never be run against the inactive CMRDETL data set. For example, if a Performance Reporting Language (PRL) program uses CMRDETL data, the job must run against either the active data set or an archived copy of the inactive data set. Your batch job can fail if it is actively selecting records from the inactive CMRDETL data set when a switch occurs.

  If necessary, the primary and archived data can be REPROed with IDCAMS into a single file for batch processing.

Archiving a CMRDETL Data Set

CMRDETL data sets can be archived with the CMRPURG purge and archive program or other standard MVS archive utilities.

Using CMRPURG

CMRPURG cannot request an archive of both CMRDETL data sets at the same time. An archive job must be run against a single CMRDETL data set. When an automatic switch occurs, the start command for CMRDJCL specifies the name of the data set to be archived. CMRDJCL passes the name of the inactive data set as a parameter to the CMRPURG program.

The CMRPURG option, LEAVE=YES, specifies whether current data should remain on CMRDETL after it is archived. The default of LEAVE=NO cannot be used for dual CMRDETL data sets. If you are using CMRPURG against dual CMRDETL data sets, LEAVE=YES must be specified as shown in BBSAMP member CMRDPARM.

Using an Archive Utility

You can use any MVS archival utility, such as IDCAMS REPRO, to archive CMRDETL data sets. The output data set should have the following DCB characteristics:

```
DSORG=PS,RECFM=VB,LRECL=4664,BLKSIZE=12000
```

To indicate the start and end of archive processing, CMRARCH1 program EXECution must precede the archive step and CMRARCH2 must follow the archive step, as shown in BBSAMP member CMRDJCL.

Chapter 6   Customizing the Application Trace Facility

MAINVIEW for CICS provides the capability to monitor and record the details of a CICS transaction in the form of a trace. A trace request can be specified that stores trace data on VSAM log data sets that can be viewed with the online HISTORY service. By requesting that traces start automatically for specified transactions, a continuous workload history is available for viewing.

Logging trace data requires an allocated trace directory and a trace log that are recognized by BBI. This chapter describes how to prepare a trace directory and trace log data sets. This chapter also includes a procedure to declare the trace defaults that appear in the MAINVIEW for CICS online trace request panels.

Preparing the trace directory can be done automatically by AutoCustomization as described in the *OS/390 and z/OS Installer Guide,* or manually as described in this chapter. Trace log data sets can be allocated in advance, or they can be dynamically allocated at the time of the trace request.

Preparing a Trace Directory

A trace directory must be allocated and initialized before trace logging can occur. This section describes how to prepare a trace log directory using batch jobs from sample members located in the BBSAMP and BBPARM data sets.

Note: If a security management system is installed at your site, you may need to grant the BBI-SS PAS authority to dynamically allocate trace log data sets.

Defining and Initializing a Trace Directory Data Set

There is one trace directory per BBI-SS PAS. A trace directory is a VSAM linear data set containing one entry for each trace log data set. Each entry indicates the date and time when the trace log data set was created, its current status, the trace target, and other related information. Entries can be added or removed from the trace directory to move trace logs to different systems.

To define and initialize a trace directory data set:

Step 1   Edit member JXT001 in your site's BBSAMP data set.

Step 2   Add your job card and edit the statements to meet your site's naming conventions.

Step 3   Submit the job.

Identifying the Trace Directory to BBI

To identify the trace directory to BBI:

Step 1   Edit member BBIISP00 from your site's BBPARM data set.

Step 2   Find and modify the following statement:

TRDIR=dsn

Define *dsn* as the name of the trace directory data set. There is no default name. The directory must be allocated and initialized before any trace can be started with trace logging. BBSAMP member JXT001 creates the trace directory.

Verifying Trace Directory Entries

Trace directory entries are not updated automatically by events occurring outside of the BBI-SS PAS, such as data set deletion or archival. Occasionally, you may need to synchronize a trace directory with the actual status of the trace log data sets.

Step 1   Edit member JXT003 in your site's BBSAMP data set to verify, purge, or print directory entries.

JXT003 checks for the existence of a trace log data set in the system catalog.

Step 2   Add your job card and edit the statements to meet your site's naming conventions.

Step 3   Specify a processing option with the PARM statement:

Option	Description
Blank	If PARM is not specified (default), an uncataloged entry is marked as INV (INVALID).
ARCVOL	If ARCVOL (Archive Volser) is specified, this value is matched against the volser in the system catalog for each entry in the directory. If matched, the data set is not verified. This allows you to bypass recalling all trace log data sets from archives.
LIST	Lists the directory entries that are changed. If NOVERIFY is specified or implied, all entries are listed (equivalent to LISTALL).
LISTALL	Lists all entries.
NOLIST	Does not list changed entries.
PURGE	Deletes any data sets in the directory that are invalid trace data sets.
NOPURGE	Does not delete invalid data sets (marked as INV (INVALID) in the directory).
VERIFY	Verifies each of the entries in the trace directory. If VERIFY is specified, the defaults are LIST, WRITE, and NOPURGE.
NOVERIFY	Does not verify entries in the trace directory.
WRITE	Updates trace directory with status changes.
NOWRITE	Does not update trace directory with changes detected.

Step 4   Submit the job.

Note: Verifying trace directories may take an extended period of time to complete because every entry in the trace directory is dynamically allocated and read to verify its current status.

Creating Trace Log Data Sets

You can define trace logs manually or let the BBI-SS PAS allocate them dynamically when needed. This section describes the steps to manually create a trace log.

If you want to learn how to dynamically allocate a trace log, refer to the *MAINVIEW for CICS Online Services Reference Manual*. It explains how to create log data sets by completing the fields of an online trace facility menu.

Sample member JXT011 located in the BBSAMP data set contains JCL to create a trace log data set. The IDCAMS DEFINE command specifies the characteristics of the data set used as a trace log.

Figure 6-1 shows an example of JXT011. You must edit your copy of JXT011 before submitting the batch job to create the trace log. Make the appropriate changes indicated by the comments in the example shown in Figure 6-1.

Figure 6-1   Example of Member JXT011 to Create Trace Log Data Sets

```
//*-------------------------------------------------------------*
//*        SAMPLE JOB TO DEFINE A TRACE LOG DATA SET            *
//*                                                             *
//*-------------------------------------------------------------*
//JXT011   JOB
//*    TO CUSTOMIZE:
//*        (1) COMPLETE JOB CARD INFORMATION
//*        (2) DEFINE NAME OF TRACE LOG DESIRED (MUST END WITH .V01)
//*        (3) PROVIDE PROPER VOL VALUE FOR THE DEFINE STATEMENT
//*
//*-------------------------------------------------------------*
//*    STEP 1 - DEFINE TRACE LOG DATA SET                       *
//*                                                             *
//*-------------------------------------------------------------*
//STEP1   EXEC PGM=IDCAMS,REGION=4M
//SYSPRINT  DD SYSOUT=*
//SYSIN     DD *
         DEFINE  CL(NAME($PREFIX.$USID.TLDS.V01)  -
                 VOL(VOLSER)  -
                 TRK(10 0)  -
                 SHR(2 3)  -
                 LINEAR)
//
```

Specifying Trace Defaults

Keywords specified in member CMRBEX00 of the BBPARM data set define the default values of MAINVIEW for CICS trace requests. These values appear in the fields of the online trace request data entry panels as the option defaults.

This section describes CMRBEX00 keywords that define trace option defaults for

- all trace requests
- detail trace request
- trace logging

General Trace Options

When the first trace, either summary or detail, is started for a CICS region, a CICS data space is allocated to manage the trace data.The data space is destroyed when the last trace for the CICS region is purged. The size of the data space is determined by the STRACSIZ and DTRACSIZ options of the CMRSOPT macro. The approximate size of the data space is as follows:

Data_Space_Size = 2 * (STRACSIZ + DTRACSIZ) + System_Overhead

Doubling the STRACSIZ and DTRACSIZ values provides space for trace logging buffers. The System_Overhead value consists of space required to hold trace tables, linked list elements, and so on. If the calculated value is greater than the maximum allowable size for a data space (2 GB), the STRACSIZ and DTRACSIZ values are adjusted downward until the total size of the data space equals 2 GB.

The following keywords set the default values of the trace display buffer size (STORAGE option) and trace duration (TRTIME option). These options apply to every type of trace and appear on the Start CICS Trace Request panel.

STORAGE=500|*nnn* Specifies the size of the display buffer in kilobytes. The default is 500 K. This value overrides the value defined in member BBIISP00.

The display buffer defined by the STORAGE option is used to view trace data for CICS tasks that have issued a CICS SYNCPOINT request. A SYNCPOINT occurs automatically during task termination; it may also be explicitly invoked by an active task. The display buffer contains general task information for both summary and detail traces. For detail traces, the buffer also contains detail event records that identify each EXEC CICS command invoked by the task being traced.

The STORAGE option defines two types of storage areas:

- the amount of storage within the CICS data space that is to be reserved for the trace request

- the amount of storage within the Extended Private Area that is to be GETMAINed when a trace is selected for viewing

TRTIME=null|*n*|*hh:mm:ss*

Define *n* as the maximum trace duration in minutes (1 to 32,000) or *hh:mm:ss* as the time at which tracing is to stop. The default is null; traces do not have a maximum duration.

Note: The STOP field of the Start CICS Trace Request data entry panel is primed with the TRTIME value. If TRTIME is not specified, the STOP field remains blank.

TRLIM=500K|*nnnnnnnn*

Specifies the maximum amount of storage allocated to a single trace. Storage is expressed in either kilobytes (*xxxx*K) or bytes (*nnnnnnnn*). If the K suffix is not specified with the TRLIM value, the storage size is interpreted as *nnnnnnnn* bytes. The default is 500K. Valid values are 1K-8000K.

If TRLIM is not specified, the default maximum storage limit is the product of the default TRBUFF and TRSIZE size multiplied by 2:

Storage_Limit = 2 * (TRBUFF * TRSIZE)

Detail Trace Options

A pool of buffers is maintained for each active detail trace. The buffers temporarily store trace data for viewing with the online trace services. The buffer pool is obtained from a CICS-specific data space. A CICS data space is created when the first trace (either summary or detail) is started for the CICS region. The CMRSOPT option DTRACSIZ defines how much of the data space is to be used for detail trace buffers. The total amount of detail trace buffer storage is allocated when the data space is created. The data space is destroyed when the last trace for the CICS region is purged.

CMRBEX00 parameters or an online Start Trace request specify the size and number of trace buffer pools. The buffer pools are assigned by CICS region.

The following keywords define the default size (TRSIZE) and number (TRBUFF) of buffers allocated for detail trace data.

CMRBEX00 keyword values appear in fields of the online Start Trace data entry panel as the defaults.

TRBUFF=10|*nnn*   Number of buffers allocated for a detail trace request. The default is 10. Valid values are 1-999.

The number of trace buffers should be at least equal to the average number of active trace requests plus 10%.

If another value is entered from the Start CICS Trace Request panel, it overrides the value specified with the CMRBEX00 TRBUFF keyword.

TRSIZE=50K|*nnn*K   Size of trace buffers in kilobytes. The default is 50K. Valid values are 1K-999K.

If the TRSIZE field is specified with another value from the Start CICS Trace Request panel, it overrides the CMRBEX00 TRSIZE keyword.

This number is rounded to a multiple of 4 K. This size multiplied by 2 determines the maximum amount of data that can be traced for one task before it is logged.

The total size of a detail trace buffer pool is the product of the number of buffers (TRBUFF) multiplied by the size (TRSIZE) of each buffer. For example, CMRBEX00 could specify

```
TARGET=CICSPROD
TRBUFF=20
TRSIZE=32K
```

Total pool size is 20 x 32 K = 640 K.

Note: If a trace is not logged, some data may be lost if a traced event requires more than two buffers to hold the data. It may be necessary to increase TRSIZE or to log the trace to record long-running tasks.

Trace Logging Options

The following keywords define the defaults to allocate a trace log data set.

TRPREFIX=*highlevel*   Defines the high-level prefix of trace log data set names if the Log DSN field of the Start CICS Trace Request panel is specified without quotes.

If TRPREFIX is left blank, the ID of the user requesting the trace is the high-level qualifier of the trace log data set name.

TRREUSE=<u>Y</u>|N   Specifies if the data within a trace log can be overwritten if it is not reset. The default is Y.

N (NO) indicates that data is not overwritten.

If the request specifies a 1 for the number of logs and N is defined for TRREUSE, data is not recorded. If the request specifies a 1 and Y is defined for TRREUSE, previously recorded data is overwritten.

TRVOLS=(*vol_1*,*vol_2*...*vol_7*)

Define *vol_n* as the ID of the default volumes allocated for trace log data sets. Up to seven volumes can be specified. The default is SYSDA.

TRCYL=3|*nnn*   Defines the default primary cylinder allocation (CYLS option) for trace log data sets. The default is 3. Valid values are 1-999.

TRSUFFIX=D|*suffix*   Specifies the default suffix added to the trace cluster DSN (Data DSN Suffix option) to make the data set name for the data component. The default is D.

TRSMSSCL=*name*   Defines the default name of the SMS storage class for trace log data set allocation. There is no default value.

TRSMSDCL=*name*   Defines the default name of the SMS data class for trace log data set allocation. There is no default value.

TRSMSMCL=*name*   Defines the default name of the SMS management class for trace log data set allocation. There is no default value.

Chapter 7   Implementing Security

There are two primary methods of securing product resources. Traditional security is available with BMC Software proprietary security. Default and customized access profiles are stored in BBPARM members $GENERIC, $USERID, and $RMTID. This chapter discusses how to implement security with BMC Software proprietary security.

MAINVIEW product security also can be enabled through the MVS system authorization facility (SAF) interface. SAF passes security requests to external security managers (ESMs). SAF security supports CA-ACF2, CA-TOP SECRET, or RACF.

Entity names define product resources that are secured by an ESM through the SAF interface. The following books provide the information you need to secure MAINVIEW for CICS resources with an ESM.

Implementing Security for MAINVIEW Products

> This book lists the SAF entity names for MAINVIEW for CICS services, views, and actions.

MAINVIEW Common Customization Guide

> This book describes how to use Plex Manager security views to manage security parameter and resource class property members in the BBSECURE data set.

Modifying the CMRSECU Macro

You can use the CMRSECU macro found in your BBSAMP data set to authorize security for MAINVIEW for CICS and/or AutoOPERATOR for CICS. The CMRSECU macro assembles and links the CMRSECU module and creates a table of security definitions.

Use the following procedure to modify the CMRSECU macro:

Step 1   Copy member CMRASM from BBSAMP to the UBBSAMP data set. Make sure the new member name conforms to your site's naming conventions.

Step 2   Edit the member created in the previous step. Read the comments in the member and then modify the JCL accordingly. Keep the following in mind:

- CMRSECU must be assembled and linked into BBLINK or an authorized load library that is concatenated in front of BBLINK.

- CMRSECU must be linked reentrant.

Step 3   Modify the sample CMRSECU macro according to your site's security requirements. A sample of CMRSECU is in member CMRUSECU of your BBSAMP data set.

The CMRSECU macro can contain up to three different TYPE statements:

TYPE=INITIAL

The CMRSECU TYPE=INITIAL statement defines security for each

- MAINVIEW for CICS function or action service
- AutoOPERATOR for CICS action service

TYPE=ENTRY

The CMRSECU TYPE=ENTRY statement further defines security by user ID. For example, specific CICS services can be restricted to individual users.

TYPE=FINAL

A single CMRSECU TYPE=FINAL statement ends the input.

Multiple sets of TYPE=INITIAL and TYPE=ENTRY statements can be specified in the CMRSECU macro. The TYPE statements and their parameters are described in the following sections.

Step 4   Submit the JCL. Check the job output to make sure all steps complete with a return code of 0.

Note: S106 abends can occur if the newly link-edited module causes the BBLINK data set to enter secondary extents and the active BBI-SS PAS attempts to load the module. If this happens, stop the BBI-SS PAS and restart it.

CMRSECU TYPE=INITIAL Statement (Required)

The CMRSECU TYPE=INITIAL statement defines security for each

- MAINVIEW for CICS function or action service
- AutoOPERATOR for CICS action service

To specify which target or targets the security definitions apply to, type:

TYPE=INITIAL,TARGET=[(*target_1*,*target_2*,...,*target_n*.) | *]

Note: The asterisk (*) indicates that security definitions apply to all non-specified targets. If an * is not specified and a non-specified target is referred to online, the first CMRSECU TYPE=INITIAL statement is used to define function security for that target. Refer to BBSAMP member CMRUSECU for an example.

To set function security, enter **YES** or **NO** for each function parameter:

YES

Indicates the function is protected. Only operator IDs with YES specified in the CMRSECU TYPE=ENTRY statement are allowed to access that function (see "CMRSECU TYPE=ENTRY Statement (Required)" on page 7-8).

NO

Indicates the function is not secured. All operator IDs allowed access to MAINVIEW for CICS and/or AutoOPERATOR for CICS are also allowed access to the function.

If the function is protected and an unauthorized operator tries to access it, an error message is issued to the operator and logged.

Display parameters apply to MAINVIEW for CICS services; if you do not have MAINVIEW for CICS installed, the parameters in the Display Parameter list do not apply. Action parameters apply to MAINVIEW for CICS functions and AutoOPERATOR for CICS IMFEXEC CICS commands. For IMFEXEC CICS syntax requirements, refer to the *AutoOPERATOR Advanced Automation Guide*.

Note: Two function parameters are listed for MAINVIEW for CICS services that display information and perform actions: one secures access to the display and the other secures the service actions. For example, TASK is both a display and an action service. Specifying TASK=NO allows unlimited access to the TASK statistics and MEMORY displays only. Specifying ALTTASK=YES secures the action services related to tasks.

Action parameters for the CMRSECU TYPE=INITIAL statement are listed in Table 7-1.

Display parameters for the CMRSECU TYPE=INITIAL statement are listed in Table 7-2 on page 7-6.

The default for each parameter is NO.

Table 7-1   Action Parameters for CMRSECU Macro (Part 1 of 2)

Parameter	MAINVIEW for CICS service description	AutoOPERATOR for CICS IMFEXEC command
ALTAID=NO|YES	Specifies whether to secure the change capability for the Automatic Initiate Descriptor statistics display and the CIADx views.	IMFEXEC CICS ALTER
ALTCLAS=NO|YES	Specifies whether to secure the change capability for the classes display.	IMFEXEC CICS ALTER
ALTCONN=NO|YES	Specifies whether to secure the status change capability in the CONNECT service and the CCONNx views. The expanded displays are included.	IMFEXEC CICS ALTER
ALTDEST=NO|YES	Specifies the status change capability for the DEST service.	IMFEXEC CICS DISABLE DEST IMFEXEC CICS ENABLE DEST IMFEXEC CICS PURGE DEST
ALTER=NO|YES	Specifies whether to secure the change capability for the virtual storage address display.	IMFEXEC CICS ALTERVS
ALTFILE=NO|YES	Specifies whether to secure the status change capability in the FILE, DDIR, DSNAMES, and DATATABL services; and the CFILEx views.	IMFEXEC CICS ALLOC IMFEXEC CICS CLOSE FILE IMFEXEC CICS DISABLE FILE IMFEXEC CICS ENABLE FILE IMFEXEC CICS FREE IMFEXEC CICS OPEN FILE IMFEXEC CICS RECOVERDB IMFEXEC CICS STARTDB IMFEXEC CICS STOPDB
ALTICES=NO|YES	Specifies whether to secure the change capability in the ICE display and the CICESx views.	IMFEXEC CICS PURGE ICE
ALTPROG=NO|YES	Specifies whether to secure the status change capability in the PROGRAM and REMOTES services, and the CPROGx views.	IMFEXEC CICS DISABLE PROGRAM IMFEXEC CICS DROP IMFEXEC CICS ENABLE PROGRAM IMFEXEC CICS LOAD PROGRAM IMFEXEC CICS NEWCOPY PROGRAM
ALTTASK=NO|YES	Specifies whether to secure the task kill capability in the TASK, ENQUEUE, TERMINAL, CONSOLES, and CONNXPND services; and in the TASKx TASKDSAx, TASKLCKx, and TASKFILx views.	IMFEXEC CICS KILL
ALTTERM=NO|YES	Specifies whether to secure the status change capability in the TERMINAL and CONSOLES services, and the CTERMx views.	IMFEXEC CICS ACQUIRE IMFEXEC CICS INSERVE IMFEXEC CICS OUTSERVE IMFEXEC CICS RELEASE IMFEXEC CICS SPURGE
ALTTRAN=NO|YES	Specifies whether to secure the status change capability in the TRAN display and the CTRANx views.	IMFEXEC CICS ENABLE TRAN IMFEXEC CICS DISABLE TRAN

Table 7-1   Action Parameters for CMRSECU Macro (Part 2 of 2)

Parameter	MAINVIEW for CICS service description	AutoOPERATOR for CICS IMFEXEC command
ALTTSUT=<u>NO</u>|YES	Specifies whether to secure the status change capability in the TSUT display and the TSQUEUEx views.	IMFEXEC CICS PURGE TSUT
SETDMPD=<u>NO</u>|YES	Specifies whether to secure the change capability of the dump dataset fields in the CREGSYS view.	IMFEXEC CICS ALTER
SETJVMP=<u>NO</u>|YES	Specifies whether to secure the change capability of the CJVMPL view.	IMFEXEC CICS ALTER
SETSYS=<u>NO</u>|YES	Specifies whether to secure the change capability of the system settings fields in the CREGSYS view.	IMFEXEC CICS ALTER
SETTCPS=<u>NO</u>|YES	Specifies whether to secure the change capability of the CTCPIP view.	IMFEXEC CICS ALTER
SETTCLA=<u>NO</u>|YES	Specifies whether to secure the change capability of the CTRNCLA view.	IMFEXEC CICS ALTER

> **Note:** In the CTRNCLA view, modifying the 'Max Act' value of transaction class DFHTCL00 is the same as modifying the 'Max Tasks' field and is secured by the SETSYS= parameter. Modifications of other classes of transactions in the CTRNCLA view are secured by the SETTCLA= parameter.

Table 7-2   Display Parameters for CMRSECU Macro (Part 1 of 2)

Parameter	MAINVIEW for CICS service description
ABEND=<u>NO</u>|YES	Specifies whether to secure the Abend status display.
AID=<u>NO</u>|YES	Specifies whether to secure the Automatic Initiate Descriptor (AID) statistics display.
CLASS=<u>NO</u>|YES	Specifies whether to secure the class maximum statistics display.
CONNECT=<u>NO</u>|YES	Specifies whether to secure the connection statistics display.The expanded displays are included.
DB2SYSP=<u>NO</u>|YES	Specifies whether to secure the DB2 system parameters and DBCTL displays.
DB2TASK=<u>NO</u>|YES	Specifies whether to secure the DB2 task statistics and DBCTASK displays.
DEST=<u>NO</u>|YES	Specifies whether to secure the destination ID information display.
DLI=<u>NO</u>|YES	Specifies whether to secure the DL/I statistics display.
DUMP=<u>NO</u>|YES	Specifies whether to secure the virtual storage address display.
ENQUEUE=<u>NO</u>|YES	Specifies whether to secure the enqueued resources display.
EXITS=<u>NO</u>|YES	Specifies whether to secure the task-related and global user exits display.

Table 7-2   Display Parameters for CMRSECU Macro (Part 2 of 2)

Parameter	MAINVIEW for CICS service description
FILE=<u>NO</u>|YES	Specifies whether to secure the files statistics display in the DL/I data base display, the file dsnames displays, and the CICS data tables displays. The expanded displays are included.
HISTORY=<u>NO</u>|YES	Specifies whether to secure the transaction history display.
ICES=<u>NO</u>|YES	Specifies whether to secure the Interval Control Element (ICE) statistics display.
JOURNAL=<u>NO</u>|YES	Specifies whether to secure the journal file statistics display.
MONITOR=<u>NO</u>|YES	Specifies whether to secure the tuning opportunities display.
NUCLEUS=<u>NO</u>|YES	Specifies whether to secure the nucleus module, LPA, and TCB displays.
PLAN=<u>NO</u>|YES	Specifies whether to secure the DB2 plan display.
PPST=<u>NO</u>|YES	Specifies whether to secure the DL/I PPST/TASK activity display.
PROBLEM=<u>NO</u>|YES	Specifies whether to secure the real-time problem analysis display. If PROBLEM=YES, you must specify OPID=*xxxxxxx* in the TYPE=ENTRY statement. The OPID= specification must equal the AUTOID or USRID specified in BBPARM member BBIISP00.
PROGRAM=<u>NO</u>|YES	Specifies whether to secure the program status display and the remote program status display.
PSB=<u>NO</u>|YES	Specifies whether to secure the DL/I PSB statistics display.
REVIEW=<u>NO</u>|YES	Specifies whether to secure the startup and current values display.
SHARE=<u>NO</u>|YES	Specifies whether to secure the VSAM shared resource statistics display.
SUBPOOL=<u>NO</u>|YES	Specifies whether to secure the SUBPOOL and REGION displays.
SUFFIX=<u>NO</u>|YES	Specifies whether to secure the CICS module and table suffixes display.
SUMMARY=<u>NO</u>|YES	Specifies whether to secure the CICS performance display.
TASK=<u>NO</u>|YES	Specifies whether to secure the task statistics and MEMORY displays. The expanded displays are included.
TEMP=<u>NO</u>|YES	Specifies whether to secure the temporary storage usage statistics display. The expanded displays are included.
TERM=<u>NO</u>|YES	Specifies whether to secure the terminal statistics display in the TERMINAL and CONSOLES services. The expanded displays are included.
TIOT=<u>NO</u>|YES	Specifies whether to secure the region allocation display.
TRAN=<u>NO</u>|YES	Specifies whether to secure the transaction statistics display. The expanded displays are included.
TSUT=<u>NO</u>|YES	Specifies whether to secure the TSUT statistics display.
VTAM=<u>NO</u>|YES	Specifies whether to secure the VTAM buffer statistics display.

CMRSECU TYPE=ENTRY Statement (Required)

The CMRSECU TYPE=ENTRY statement and its parameters are used to qualify access to each

- MAINVIEW for CICS function or action service
- AutoOPERATOR for CICS action service

that has been secured through the CMRSECU TYPE=INITIAL statement.

One CMRSECU TYPE=ENTRY statement is required for each operator ID that requires access to the previously secured function or service.

If the function is protected and an unauthorized operator tries to access it, an error message is issued to the operator and logged.

Specify **YES** or **NO** for each function or action service which has been secured by CMRSECU TYPE=INITIAL where

YES

> Indicates the operator can access the function or service that has been secured.

NO

> Indicates the operator cannot access the function or service that has been secured.

Parameters for the CMRSECU TYPE=ENTRY statement are

`OPID=xxxxxxxx│*`

OPID specifies an operator ID, where

> *xxxxxxxx* is a
>
> - TSO user ID for access through a terminal session
> - EXCP user ID for access through an EXCP session
> - VTAM user ID for access through a VTAM session
>
> `*` is a generic qualifier for an operator ID; for example, `AB*`.

The display and action parameters are the same as the CMRSECU TYPE=INITIAL parameters.

Action parameters for the CMRSECU TYPE=INITIAL statement are listed in Table 7-1 on page 7-5.

Display parameters for the CMRSECU TYPE=INITIAL statement are listed in Table 7-2 on page 7-6.

CMRSECU TYPE=FINAL Statement (Required)

The CMRSECU TYPE=FINAL statement has one parameter and ends this option generation; for example:

```
CMRSECU TYPE=FINAL
```

Resetting the CMRSECU Macro

The CMRSECU table can be reset dynamically with the following command:

.RESET PARM CMRSECU

See the *MAINVIEW Administration Guide* for a description of the RESET control command and supported parameters.

Chapter 8   Common Tasks

This chapter summarizes some of the common tasks involved in customizing MAINVIEW for CICS. Use the checklists provided in this chapter to

- guide you through each task
- help you find more information

Adding Additional CICS Regions

To add additional CICS regions monitored by MAINVIEW for CICS:

Step 1   Update member BBIJNT00 of the UBBPARM data set to add a new CICS region; for example:

TARGET=*xxxxxxx*,TYPE=CICS,SUBSYS=*subsys*

See "Step 20: (Required) Define BBI-SS PAS Suffixes and Target System Parameters" in the *MAINVIEW Common Customization Guide*.

Step 2   Update UBBPARM member BBIISP00 to add an additional target entry; for example:

TARGET=*xxxxxxx*,BLK=*blk_name*[,USRID=*user_id*]

See "Step 22: (Optional) Specify BBI Internal Services Parameters" in the *MAINVIEW Common Customization Guide*.

Step 3   Modify the CICS startup JCL.

See "Step 1: Modifying CICS Startup JCL" on page 3-4.

Step 4   Modify the following CICS tables:

- PCT (use BBSAMP member CMRCSDES), see "Step 2: Modifying the PCT and PPT" on page 3-5

- PPT (use BBSAMP member CMRCSDES), see "Step 2: Modifying the PCT and PPT" on page 3-5

- PLT, see "Step 3: Modifying the PLT" on page 3-6

- SIT, see "Step 4: Modifying the SIT" on page 3-10

- MCT, see "Step 5: Modifying the MCT" on page 3-12

Step 5   Define single or dual CMRDETL data sets for new regions.

For a single CMRDETL data set, see "Step 6: Specifying CMRDETL Data Sets (Optional)" on page 3-14.

For dual CMRDETL data sets, see "Step 7: Specifying Dual CMRDETL Data Sets (Optional)" on page 3-16.

Upgrading CICS Regions

To upgrade CICS regions:

Step 1   Modify the CICS startup JCL.

See "Step 1: Modifying CICS Startup JCL" on page 3-4.

Step 2   Modify the following CICS tables:

- PCT (use BBSAMP member CMRCSDES), see "Step 2: Modifying the PCT and PPT" on page 3-5

- PPT (use BBSAMP member CMRCSDES), see "Step 2: Modifying the PCT and PPT" on page 3-5

- PLT, see "Step 3: Modifying the PLT" on page 3-6

- SIT, see "Step 4: Modifying the SIT" on page 3-10

- MCT, see "Step 5: Modifying the MCT" on page 3-12

Starting Communication between a CICS Region and BBI-SS PAS

To activate communication between a CICS region and the BBI-SS PAS, you must use one of the following CICS transactions:

SMN2

This transaction can be issued only from a terminal. It displays a menu to establish communication and data collection or only communication.

FST2

This transaction can be issued from any device or invoked from an AutoOPERATOR EXEC. It activates communication only when issued without any operands.

See "Activating CICS Data Collection" in the *MAINVIEW for CICS Online Services Reference Manual*.

Starting and Stopping Full Data Monitoring

To start and stop full data monitoring between a CICS region and the BBI-SS PAS, you must perform the following task. This procedure provides full global and transaction level data collection, which enables you to view data in the online Graph services and Summary display.

Use one of the following CICS transactions:

SMN2

This transaction can be issued only from a terminal. It displays a menu to establish communication and full data collection.

SMN2 also can be used to stop full data collection. Communication cannot be stopped once it is started.

FST2 QON | QOFF

This transaction can be issued from any device or invoked from an AutoOPERATOR EXEC. Use this transaction with the appropriate parameter to start (QON) or stop (QOFF) full data collection.

Communication between the CICS region and the BBI-SS PAS remains active even though data collection has stopped.

See "Activating CICS Data Collection" in the *MAINVIEW for CICS Online Services Reference Manual*.

Starting Collection of Data from Other Products

To start collecting data from a fourth-generation language (4GL) or third-party database product:

Step 1   Use either the CMRSOPT parameters or sample exits supplied by MAINVIEW for CICS.

Step 2   Assemble and link your modified source module (CMRUSOPT).

See "Setting Monitoring Conditions (CMRSOPT)" on page 4-2.

Adding or Deleting Graph Data

To add or delete resources to be graphed:

Step 1   Modify CMRSOPT options.

See "TYPE=resource Statement (Optional)" on page 4-14. Also note the approximate storage requirements discussed in that section.

Step 2   Assemble and link your modified source module (CMRUSOPT) as described in "Setting Monitoring Conditions (CMRSOPT)" on page 4-2.

Changing MAINVIEW for CICS Display Service Security

To change MAINVIEW for CICS display service security:

Step 1 See *Implementing Security for MAINVIEW Products* for information about implementing MAINVIEW for CICS security. This step does not secure MAINVIEW for CICS online services.

Step 2 See Chapter 7, "Implementing Security," to secure MAINVIEW for CICS online services.

Step 3 Assemble and link CMRSECU as described in "Modifying the CMRSECU Macro" on page 7-2.

Changing or Adding Problem Thresholds

To change or add problem thresholds, use one of the following methods:

Step 1 See "Setting Problem Thresholds (CMRPRBT)" on page 4-17 for user-specifiable thresholds.

Step 2 Assemble and link CMRUPRBT as described on page 4-17.

 or

Step 1 See "TYPE=resource Statement (Optional)" on page 4-14 for information about altering the MAXRESP value.

MAXRESP sets the threshold for the FT094 and FT095 service level response time messages as well as the threshold values for graphed resources.

Step 2 Assemble and link your modified source module (CMRUSOPT) as described in "Setting Monitoring Conditions (CMRSOPT)" on page 4-2.

Preparing Dual CMRDETL Recording and Archiving

To set up and enable dual detail file recording and archiving:

Step 1   To define and enable CMRDETL data sets, see "Step 6: Specifying CMRDETL Data Sets (Optional)" on page 3-14.

Step 2   See Chapter 4, "Optional Implementation Procedures," for general processing considerations.

Step 3   See "Archiving Dual CMRDETL Data Sets" on page G-5 for archiving instructions.

Modifying Graph Thresholds

To modify graph thresholds:

Step 1   Set the response time thresholds for graphed resources such as files, transactions, terminals, panels, MAPs, and PSBs.

The MAXRESP parameter indicates the warning level; the severe level is automatically double the specified value. See "TYPE=FINAL Statement (Required)" on page 4-16 to change the MAXRESP parameter.

Step 2   Assemble and link your modified source module (CMRUSOPT) as described in "Setting Monitoring Conditions (CMRSOPT)" on page 4-2.

Note: Thresholds for non-resource graph fields are fixed.

See "Field Cross-Reference for Graphs" in the *MAINVIEW for CICS Online Services Reference Manual* for the threshold value for each graphed field.

Adding or Deleting Global Statistical Records

To add or delete global statistical records:

Step 1   Change the default parameters specified in CMRSOPT to add or delete global statistic record types. See "TYPE=INITIAL Statement (Default Conditions)" on page 4-3.

Valid CMRSTAT record types are: CSA, DCT, DLZ, FCT, GNI, IRC, ITD, JCT, LTX, PAM, PCT, POL, PPT, RCT, STI, TCT, TST, and T6F=NO.

The default data collection interval for most record types is either 60 (once each hour) or 0 (the record is not recorded).

See "MAINVIEW for CICS Records" in the appendix of the *MAINVIEW for CICS PERFORMANCE REPORTER User Guide* for the format of each global statistics record.

Step 2   Assemble and link your modified source module (CMRUSOPT) as described in "Setting Monitoring Conditions (CMRSOPT)" on page 4-2.

Appendix A Additional MAINVIEW AutoOPERATOR Functions

This appendix identifies additional MAINVIEW AutoOPERATOR functions that become available when you establish communications between the BBI-SS PAS and CICS.

Once you have implemented BBI-SS PAS to CICS communication, you can

- use the Rule Processor to capture messages from the CICS transient data queue

- issue the C and P line commands from the STATUS application's TASK display

- issue the CHAP (Change Task Priority) line command from the STATUS application's TASK display

- use the BROADCAST application from the CICS Operator Workstation in the BBI-TS

- use the CICS dependent IMFEXEC CICS commands from an EXEC

  The CICS dependent IMFEXEC CICS commands are as follows:

Command	Description
ACQUIRE TERMINAL	Acquire a VTAM-supported terminal.
ALLOC	Allocate a data set to a CICS region.
CEMT	Issue a CICS master terminal command.
CHAP	Change a task's priority in a CICS region.
CLOSE	Close a file in a CICS region.

Command	Description
DISABLE	Disable a CICS resource.
DROP	Decrease the use count of a CICS program.
DUMPDB	Prepare a database for dumping.
ENABLE	Make a CICS resource available for use.
FREE	Deallocate a data set to a CICS region.
INSERVE	Place a CICS resource in service.
KILL TASK (PURGE, FORCEPURGE)	Terminate a task in a CICS region by task number.
KILL TERM	Terminate a task in a CICS region by term ID.
LOAD	Load a program in a CICS region.
NEWCOPY	Load a new version of a program in a CICS region.
OPEN	Open a file in a CICS region.
OUTSERVE	Place a CICS resource out of service.
PURGE	Purge a resource in a CICS region.
RECOVERYDB	Prepare a database for recovery.
RELEASE TERMINAL	Release a VTAM-supported terminal.
STARTDB	Start a database.
STOPDB	Stop a database.

However, if you choose not to implement BBI-SS PAS to CICS communication, you can still use MAINVIEW AutoOPERATOR to

- use the STATUS application from the CICS Operator Workstation in the BBI-TS

- issue the K, D, and F line commands from the STATUS application's TASK display

- use the CICS independent IMFEXEC CICS commands from an EXEC

  The CICS independent IMFEXEC commands are as follows:

Command	Description
ALLOC (LOCAL only)	Allocate a data set to the BBI-SS PAS.
ALTER	Change CICS task related throttles.
ALTERVS	Change virtual storage in the CICS region.
DISABLE (TRAN, DEST, PROGRAM)	Disable a CICS resource.
ENABLE (TRAN, DEST, PROGRAM)	Make a CICS resource available for use.

Command	Description
FREE (LOCAL only)	Deallocate a data set from the BBI-SS PAS.
KILL TASK (KILL, WITH DUMP, FORCE	Terminate a task in a CICS region by task number.
QUERY	Invoke a MAINVIEW for CICS service.
SPURGE	Change the spurge value for CICS transactions.

Appendix B   Deactivating CICS Global User Exit Trace

MAINVIEW for CICS and MAINVIEW AutoOPERATOR use CICS global user exits to gather information from a region. With CICS trace active, the tracing of exits adds overhead and decreases the amount of user information available in the incore trace table. You can turn off the user exit trace entries generated by MAINVIEW for CICS and MAINVIEW AutoOPERATOR. However, doing so also deactivates any other user exit trace entries; other products and user code that include user exits are no longer traced.

To turn off user exit tracing, you can

- set the following SIT parameters to suppress component tracing at CICS initialization time:

    SPCTRUE=OFF

     Suppress special tracing for user exit interface

    STNTRUE=OFF

     Suppress standard tracing for user exit interface

- use the CETR transaction

Appendix C   CICS Temporary Storage Usage

MAINVIEW products occasionally start a CICS transaction by using interval control services. The start of such a transaction must not be prevented from completing because of the existence of any recoverable temporary storage definitions in the CICS temporary storage table (TST).

If a conflict exists between the MAINVIEW temporary storage prefix and an existing temporary storage definition, the prefix used by MAINVIEW (CMRI) must be changed by applying the following ZAP:

```
NAME CMRINT2 CMRINT2
VER  00BC    C3D4D9C9
REP  00BC    xxxxxxxx  (any nonrecoverable prefix)
```

Refer to the following sources to determine whether a conflict exists between the MAINVIEW temporary storage prefix and an existing temporary storage definition:

- MAINVIEW AutoOPERATOR:

    See the "Implementation Considerations" section of the *MAINVIEW AutoOPERATOR Customization Guide*.

- MAINVIEW for CICS and MAINVIEW AutoOPERATOR:

    See "Implementation Considerations" on page 3-1.

Appendix D   Manual Control of Automated Functions

This appendix describes how to control the following MAINVIEW for CICS functions manually:

- BBI-SS PAS-to-CICS communication
- monitoring
- task kill exit

For instructions about implementing these functions for automatic startup:

- When implementing MAINVIEW AutoOPERATOR only, refer to "Implementing BBI-SS PAS-to-CICS Communication" in the *MAINVIEW AutoOPERATOR Customization Guide*.

- When implementing MAINVIEW for CICS and MAINVIEW AutoOPERATOR, refer to "Step 3: Modifying the PLT" on page 3-6.

Starting BBI-SS PAS-to-CICS Communication

If you used the CMRPLT macro to modify the PLT, BBI-SS PAS-to-CICS communication starts automatically at CICS startup. If you did not modify the PLT, you can manually start BBI-SS PAS-to-CICS communication from a CICS terminal or an MVS console that is defined to CICS.

To start BBI-SS PAS-to-CICS communication from a CICS terminal:

Step 1   Invoke the SMN2 transaction.

Step 2   In the **ESTABLISH COMMUNICATIONS** field, type **YES**.

Step 3   Press **Enter**.

To start BBI-SS PAS-to-CICS communication from an MVS console that is defined to CICS, use the MODIFY command to invoke the FST2 transaction in the CICS region. For example:

F CICSPROD,FST2

invokes the FST2 transaction in the CICS region with the MVS job name of CICSPROD.

Starting MAINVIEW for CICS Monitoring

If you used the CMRPLT macro to modify the PLT, MAINVIEW for CICS monitoring starts automatically at CICS startup. If you did not modify the PLT or monitoring was stopped after CICS startup, you can manually start monitoring from a CICS terminal or an MVS console that is defined to CICS.

To start MAINVIEW for CICS monitoring from a CICS terminal:

Step 1   Invoke the SMN2 transaction.

Step 2   In the **EXTRACTOR STATUS** field, type **ON**.

Step 3   Press **Enter**.

To start MAINVIEW for CICS monitoring from an MVS console that is defined to CICS, use the MODIFY command to invoke the FST2 transaction with the QON option in the CICS region. For example:

F CICSPROD,FST2 QON

turns on MAINVIEW for CICS monitoring in the CICS region with the MVS job name of CICSPROD.

Controlling the Task Kill Exit

If you used the KILLEXIT parameter of the CMRPLT macro, the task kill exit (CMRXEIO) starts automatically at CICS startup. You can also control CMRXEIO manually by issuing the XEIO transaction from a CICS terminal or an MVS console that is defined to CICS.

To control CMRXEIO from a CICS terminal, invoke the XEIO transaction with one of the following options:

XEIO QON

Start the CMRXEIO exit.

XEIO QOFF

Stop the CMRXEIO exit.

XEIO RELOAD

Stop the exit, unload module CMRXEIO, load a new copy of the module, and restart the exit.

To control CMRXEIO from an MVS console that is defined to CICS, use the MODIFY command to invoke the XEIO transaction with the appropriate option in the CICS region. For example:

F CICSPROD,XEIO QON

turns on the task kill exit in the CICS region with the MVS job name of CICSPROD.

Appendix E   CICS PCT and PPT Usage

This appendix describes the Program Control Table (PCT) and Processing Program Table (PPT) entries generated by MAINVIEW for CICS and MAINVIEW AutoOPERATOR.

PCT Entries for MAINVIEW for CICS and MAINVIEW AutoOPERATOR

Table E-1 describes the transaction IDs used by MAINVIEW for CICS and MAINVIEW AutoOPERATOR.

Table E-1   Transaction IDs (Part 1 of 2)

Transaction ID	Description
BCRT	For CICS 4.1 and later, the long-running transaction BCRT processes GET and SET requests that require CICS SPI commands to collect data and process modifications. For CICS Transaction Server 2.*x* and later, it also handles, on an interval basis, the queues that control the allocation and reuse of the MAINVIEW for CICS TIE (Task Interface Element) space used by the data extractor.
	The PCT and PPT entries required by BCRT are dynamically defined and do not require changes to the CSD.
	For user security purposes and other monitoring exits, BCRT should be handled like transaction JNL2.
	This transaction is used by MAINVIEW for CICS 5.6 and later.
FCD2	Performs an action request that uses CICS services for completion. It is scheduled once for each request to ensure proper serialization.
FCM1	Routes messages to terminals through BMS to broadcast AutoOPERATOR for CICS messages.
FIC2	Captures and records MAINVIEW for CICS statistical data. It runs once each minute.
FST2	Activates (FST2 QON), deactivates (FST2 QOFF), and controls the communications and data collection components under CICS and switches dual CMRDETL data sets (FST2 SWITCH). It normally runs asynchronously (without a terminal), but it can be entered from an MVS console defined to CICS.
JNL2	Monitors the status of the BBI-SS PAS and starts transaction FCD2 when CICS action requests are processed. JNL2 is always shown as active on the TASK display, but most of that time is spent waiting (user ECB). When JNL2 starts, it remains active because it must be present in the system at all times once communication with the BBI-SS PAS is established. JNL2 is assigned a very high internal dispatching priority.

Table E-1   Transaction IDs (Part 2 of 2)

Transaction ID	Description
SMN2	Allows manual starting of communications and data collection components. It also allows manual stopping of data collection. Communications, however, remain active once started. It schedules FST2 (FST2 QON, FST2 QOFF) to perform a service and reports on the status of the components. Its use is required if the PLT is not used to start data collection and communications automatically.
XEIO	Activates (XEIO QON) and deactivates (XEIO QOFF) the automated task kill exit (CMRXEIO). This exit abends any task that exceeds its defined resource usage thresholds. XEIO RELOAD refreshes the resource threshold table (CMRTTHR).

If your site has existing transaction IDs that are the same as those used by MAINVIEW for CICS or AutoOPERATOR for CICS, or your site has standards that preclude the use of these IDs, you need to change them. Table E-2 lists ZAPs that can be applied to change these IDs.

Table E-2   ZAPs for Transaction ID Changes

Tran ID	ZAP required if transaction ID is changed
BCRT	NAME CMRINT2 CMRINT2 VER 0080 C2C3D9E3 REP 0080 *xxxxxxxx*
FCD2	NAME CMRINT2 CMRINT2 VER 00C0 C6C3C4F2 REP 00C0 *xxxxxxxx*
FCM1	NAME CMRINT2 CMRINT2 VER 00A8 C6C3D4F1 REP 00A8 *xxxxxxxx*
FIC2	NAME CMRINT2 CMRINT2 VER 00B8 C6C9C3F2 REP 00B8 *xxxxxxxx*
FST2	NAME CMRINT2 CMRINT2 VER 00B0 C6E2E3F2 REP 00B0 *xxxxxxxx*
JNL2	NAME CMRINT2 CMRINT2 VER 00B4 D1D5D3F2 REP 00B4 *xxxxxxxx*
SMN2	NAME CMRINT2 CMRINT2 VER 00A4 E2D4D5F2 REP 00A4 *xxxxxxxx*
XEIO	(No ZAP required)

Note: While the transaction IDs may change in CICS, the original transaction IDs still appear in online help.

PPT Entries for MAINVIEW for CICS and MAINVIEW AutoOPERATOR

This section lists the PPT entries generated for MAINVIEW for CICS and MAINVIEW AutoOPERATOR. The lists are grouped by release-independent and release-dependent programs.

Release-Independent Programs

The programs listed in Table E-3 operate under any CICS release.

Table E-3   Release-Independent Programs

Program	Description
CMRINT2	CICS products internal table
CMRLOGM	CICS products message logging program
CSLOAD	CICS products common services program
CSLOADC	CICS products common services program
CMRTMON	CICS products interactive startup program
CMRTMAP	CICS products interactive startup BMS mapset
CBQCMD	AutoOPERATOR for CICS broadcast program
CMRXEIST	Task auto kill exit start and stop routine
CMRXTFG	XT component master control block
OLTVCAO	Verifies release support and capability
OLTSCAO	Start and stop the AutoOperator transient data exit
OLTVER	Determines the OLTP release level

Release-Dependent Programs

These programs operate under a specific CICS release. Table E-4 lists the programs. The release dependency is indicated by the following suffixes used with the program name:

Suffix	CICS Release
6	CICS/ESA 4.1 only
8	CICS Transaction Server 1.1 only
9	CICS Transaction Server 1.2 only
0	CICS Transaction Server 1.3 only
1	CICS Transaction Server 2.1 only
2	CICS Transaction Server 2.2 only

Table E-4   Release-Dependent Programs (Part 1 of 2)

Program	Description
CMRFSET6 CMRFSET8 CMRFSET9 CMRFSET0 CMRFSET1	CICS products initialization program
CMRJRNL6 CMRJRNL8 CMRJRNL9 CMRJRNL0	CICS products BBI-SS PAS communications program
CMRFCMD6 CMRFCMD8 CMRFCMD9 CMRFCMD0	CICS products action service program
CMRTDPX6 CMRTDPX8 CMRTDPX9 CMRTDPX0	AutoOPERATOR for CICS transient data exit program
CMRCMPX6 CMRCMPX8 CMRCMPX9 CMRCMPX0	MAINVIEW for CICS monitoring task-related user exit program
CMRKCPX6 CMRKCPX8 CMRKCPX9 CMRKCPX0	MAINVIEW for CICS data collection global exit program
CMRTRUE6 CMRTRUE8 CMRTRUE9 CMRTRUE0	MAINVIEW for CICS task-related user exit program

Table E-4   Release-Dependent Programs (Part 2 of 2)

Program	Description
CMRROLL6 CMRROLL8 CMRROLL9 CMRROLL0	MAINVIEW for CICS statistics output program
CMRSLOG6 CMRSLOG8 CMRSLOG9 CMRSLOG0	MAINVIEW for CICS statistics gathering program
CMRXEIO6 CMRXEIO8 CMRXEIO9 CMRXEIO0	MAINVIEW for CICS task kill global user exit program
OLTSCMR6 OLTSCMR8 OLTSCMR9 OLTSCMR0	Start and stop MAINVIEW for CICS data collection
OLTVCMR6 OLTVCMR8 OLTVCMR9 OLTVCMR0	Test OLTP release compatibility

Appendix F   BBSAMP Data Set Members

The BBSAMP data set contains sample macros, JCL, and user exit routines that you can copy and modify. The first section describes common members that are shared by MAINVIEW for CICS and MAINVIEW AutoOPERATOR. The second section describes BBSAMP members that apply to only MAINVIEW for CICS.

Sample Members for MAINVIEW AutoOPERATOR and MAINVIEW for CICS

Table F-1 describes members of the BBSAMP data set that are used by both MAINVIEW AutoOPERATOR and MAINVIEW for CICS.

Table F-1   Shared BBSAMP Data Set Members

Member name	Description
CICSRACF	CLIST that provides an interactive dialog to build SAF resource definitions.
CMRASM	Sample JCL to assemble and link-edit any of the following modules: • CMRPRBT (MAINVIEW for CICS only) • CMRRAPM (MAINVIEW for CICS only) • CMRSECU (MAINVIEW for CICS and MAINVIEW AutoOPERATOR) • CMRSOPT (MAINVIEW for CICS only) Descriptions of these modules can be found in this table and in Table F-2 on page F-2.
CMRCSDES	Sample JCL for PCT and PPT RDO definitions.
CMRPLT	Macro used to generate correct PLT entries for all CICS regions.
CMRSECU	Macro that assembles and links the CMRSECU module and creates a table of security definitions.
CMRUSECU	Sample to define function security.

Sample Members for MAINVIEW for CICS

Table F-2 describes members of the BBSAMP data set that are used only by MAINVIEW for CICS.

Table F-2   MAINVIEW for CICS BBSAMP Data Set Members (Part 1 of 3)

Member name	Description
CMR$DATA	Assembler DSECT for the MAINVIEW for CICS data included in the CICS SMF 110 record.
CMR$DMCT	Sample Monitor Control Table entry to collect MAINVIEW for CICS data for inclusion in the CICS SMF 110 record.
CMR$DSAS	SAS definitions for the MAINVIEW for CICS data included in the CICS SMF 110 record.
CMRADAX	Sample exit for Adabas version 5 to capture MAINVIEW for CICS data after a database call.
CMRADBX	Sample exit for Adabas version 5 to capture MAINVIEW for CICS before a database call.
CMRBARC	Sample JCL to copy a trace log data set to a sequential data set for archival.
CMRBRLOD	Sample JCL to reload an archived copy of a trace to a new trace log data set for online viewing.
CMRCHRT	Sample batch report JCL and control statements.
CMRCJCL	Sample JCL program used to decompress detail records.
CMRCOBnn	VS/COBOL II batch program samples for generating CICS performance statistics reports.
CMRCOBCP	Sample VS/COBOL II copybook containing CMRDETL record definitions for CMRFRED program communication.
CMRCOBJ1 CMRCOBJ2	Sample JCL to compile and execute VS/COBOL II programs.
CMRCONV	Sample JCL to run the date conversion program for year 2000 support. Files produced by previous releases of MAINVIEW for CICS must be converted before the data can be processed by version 5.2 or later.
CMRCOPY	Sample JCL to copy disk or tape files to temporary files prior to processing by the CMRCONV date conversion program.
CMRCSOR	Sample PRL control statements to produce a Transaction Class Usage report.
CMRDCTRD	Sample PRL control statements to produce detail and summary reports about the Destination Control Table.
CMRDDTL	Sample JCL to delete and define CMRDETL VSAM data sets.
CMRDFSUM	Sample JCL to delete and define the VSAM data sets holding summarized records created by the CMRSUMD utility.
CMRDJCL	Sample JCL to archive data from the CMRDETL data set.
CMRDLDF	Sample JCL to delete and define CMRSTAT and CMRDETL VSAM files and load the initial record into CMRDETL.
CMRDPARM	Sample CMRPURG parameters.

Table F-2   MAINVIEW for CICS BBSAMP Data Set Members (Part 2 of 3)

Member name	Description
CMRFCTRD CMRFCTRS	Sample PRL control statements to produce the File Control Table summary and detail reports.
CMRJCTRD CMRJCTRS	Sample PRL control statements to produce the Journal Control Table summary and detail reports.
CMRJCTXn	Sample JCT user journal definitions for various CICS releases.
CMRL	Sample JCL to execute PRL programs.
CMRMCTXn	Sample Monitor Control Table entries required to record DL/I performance statistics for various releases of CICS.
CMRPCTR	Sample PRL statements to produce the Program Control Table (PCT) short-term report.
CMRPPTR	Sample PRL statements to produce the Processing Program Table (PPT) short-term report.
CMRPRBT	Macro to generate the problem threshold definitions table.
CMRPRLn	Various examples of Performance Reporting Language (PRL) control statements to generate reports.
CMRPURGE	Sample JCL to purge and merge recorder file data.
CMRRAP	Sample JCL to generate the Resource Analysis Report.
CMRRAPM	Macro used to define the resource analysis table used by CMRRAPR and CMRCHRT.
CMRREPRO	Sample JCL to copy VSAM files to temporary files prior to processing by the CMRCONV date conversion program.
CMRS2AX	Sample exit for SYS2K version 12.0 to captureMAINVIEW for CICS activity after a database call.
CMRS2BX	Sample exit for SYS2K version 12.0 to capture MAINVIEW for CICS activity before a database call.
CMRSASxx	Various SAS programs to read CMRDETL data and create reports.
CMRSITR	Sample PRL statements to generate the System Initialization Table (SIT) report.
CMRSOPT	Sample macro that specifies monitored resources, collection intervals, and response time service levels.
CMRSTATC	Sample JCL to run a conversion routine for CICS/ESA statistical records.
CMRSTATX	Sample JCL to process type 110 records stored in the SMF data set prior to their use by the CICS statistics program, DFHSTUP, and other products that use the same data. CMRSTATX removes MAINVIEW for CICS records that are added to the SMF data set.
CMRSUMD	Sample program to create four workloads of daily summary records.
CMRSUMDx	Sample CMRSUMD control statements to create summary records for various intervals.
CMRSUP01 CMRSUP02	Sample pre- and post-call exit points for monitoring SUPRA version 1.3.
CMRSUPRX	Sample exit for monitoring SUPRA version 2.4 or later.
CMRTBTRA	Sample JCL to print trace log data sets.
CMRTCTRD CMRTCTRS	Sample PRL statements to produce the Terminal Control Table (TCT) summary and detail reports.

Table F-2　　MAINVIEW for CICS BBSAMP Data Set Members　(Part 3 of 3)

Member name	Description
CMRTSTRD CMRTSTRS	Sample PRL statements for CICS/ESA users to produce the Temporary Storage Table (TST) summary and detail reports.
CMRTTHR	Macro to generate the resource threshold table for use by the task kill exit (CMRXEIO).
CMRUACMP	Sample user exit to call the CMRCUEX program.
CMRUAPLT	Sample PLT program to start CMRUACMP.
CMRUPRBT	Sample to define the problem threshold table.
CMRURAPM	Sample to define the resource analysis table.
CMRUSOPT	Sample macro options that define the monitoring options table.
CMRUSRSD	Sample exit called by CMRSUMD summarization utility to give control to a user-written routine when a CMRDETL record is processed.
CMRUSR01	Sample of a user exit to switch CMRDETL data sets when one becomes full and needs to be archived.
CMRUTTHR	Sample task resource threshold table for use by the task kill exit (CMRXEIO). CMRUTTHR contains sample resource threshold definitions and a list of MAINVIEW for CICS transactions that should not be included in automated task kill processing.
DCCTXPR	Sample exit to the DATACOM/DB DCCTXPR routine.
FACTRECM	Sample assembler DSECTs.
GENEROL	Sample user exit for inclusion in the GENER/OL user task program.
LPCZZMON	Sample modification of the MSA LPCZZMON exit.
NCIRDCX1	Sample user exit to capture the Natural program name (for Natural version 2.2.*n*).
SAPCMROT	A sample program to store SAP data in the T6E record of the CMRDETL data set. SAPCMROT captures SAP data by calls to the MAINVIEW for CICS exit, CMRCUEX, which is described in Appendix H, "User Exit Interface (CMRCUEX)." SAPCMROT must be included in the SAP statistics exit (SAPSTEC) to pass data to MAINVIEW for CICS by a CMRCUEX call.
SAPCMROW	Sample of the SAPSTEC exit called by the SAP system to pass information to MAINVIEW for CICS by a CMRCUEX call.
SAPCMRTW	SAPCMRTW terminates previously initiated clocks as part of passing SAP data to MAINVIEW for CICS. SAPCMRTW must be included in the SAP statistics exit (SAPSTEC) to pass data to MAINVIEW for CICS by a CMRCUEX call.
SAPCMRWT	SAPCMRWT captures data about SAP work area waits. It issues a call to MAINVIEW for CICS to begin timing the wait. SAPCMRWT must be included in the SAP statistics exit (SAPSTEC) to pass data to MAINVIEW for CICS by a CMRCUEX call.
SASIN*xx*	Control statements for statistical analysis system (SAS) to process MAINVIEW for CICS global and detail statistical data.
TTHRJCL	Sample JCL and instructions for assembling and linking a new CMRTTHR task resource threshold table.
XNCIRDC1	Sample user exit to capture the Natural program name (for Natural version 2.3.1 or later).

Appendix G Archiving Data (CMRPURG)

CMRPURG is a program that archives and purges data stored in the MAINVIEW for CICS CMRDETL data sets. CMRPURG can also merge CMRDETL records with other records archived to a tape data set.

Archiving a Single CMRDETL Data Set

This section describes the procedure to archive and purge records from a single CMRDETL data set. Refer to "Archiving Dual CMRDETL Data Sets" on page G-5 for a description of the procedure to process dual CMRDETL data sets with CMRPURG.

Before submitting the CMRPURG job, you must stop collecting data from the active CICS region. To do this, issue the CICS SMN2 transaction from a CICS terminal or FST2 QOFF from an MVS console.

Sample JCL to run the CMRPURG program can be found in the CMRPURGE member of your BBSAMP data set. Figure G-1 shows an example of the JCL to run the CMRPURG batch program. Descriptions of the control statements follow the example.

Figure G-1   Sample JCL to Run CMRPURG for a Single CMRDETL Data Set

```
//jobname  JOB  user parameters
/*JOBPARM  user parameters
//JOBLIB   DD   DISP=SHR,DSN=CMR.CMRV3.BBLINK
//ARCHIVE  EXEC PGM=CMRPURG
//TAPEIN   DD   DISP=OLD,DSN=PREV.HISTORY.FILE
//TAPEOUT  DD   DISP=(NEW,CATLG),DSN=CMR.MERGED.ARCHIVE,UNIT=TAPE
//CMRWRK1  DD   DSN=CMR.CMRWRK1,SPACE=(CYL,(10,10)),UNIT=SYSDA
//              DISP=(NEW,DELETE,CATLG)
//CMRDETL  DD   DISP=SHR,DSN=CMR.CMRV3.CMRDETL
//REPORT   DD   SYSOUT=*
//SYSPRINT DD   SYSOUT=*
//SYSIN    DD   *
DATE=mmddyyyy
HISTORY=YES
```

//TAPEIN	Identifies the data set to be merged and archived with the purged CMRDETL records.
//TAPEOUT	Identifies the output tape data set for the purged CMRDETL records.
//CMRWRK1	Specifies a data set, CMRWRK1, to hold all records that are not archived during the reorganization phase. The recorder data sets also must be defined with REUSE so that reorganization can occur. Records are written to tape or disk.
//CMRDETL	Identifies the MAINVIEW for CICS CMRDETL data sets to be processed. Archiving these data sets to a separate tape by using separate jobs increases access to statistical data because there is less volume. More days can then be kept online without requiring a purge.
DATE=	Specifies the purge date. This statement must start in column 1. All data stamped with this or a prior date is purged and, if requested, archived to the output tape data set.
	DATE=12319999 purges all the data from the recorder data set.

Note: If 12319999 is specified, the CMRWRK1 data set is not required.

The purge date can also be specified as the number of days preceding the current date. The format is

```
DATE=*-nn
```

Define *nn* as a two-digit number of days prior to the current date. Note that the date calculated can represent a day in the previous year. The actual date calculated by the program is displayed by an informational message on the report output.

HISTORY=   Specifies the type of history tape manipulation to be performed. This statement must start in column 1. Valid values are as follows:

   NO   No input or output history tapes are to be used. Purges all data that has a date earlier than the date specified.

   OUT   No input tape is to be used. Only an output tape is to be created containing the data to be purged.

   YES   Both input and output tapes are to be used. The data on the input tape is to be merged with the data to be purged from the MAINVIEW for CICS recorder data sets and written to the output tape.

The Archive-Purge Process

1. Reads data from the recorder data sets, merges it with another archive data set (HISTORY=YES), and then writes it to the history output tape (HISTORY=YES or HISTORY=OUT). If HISTORY=NO is specified, the data is deleted and not archived.

2. Purges data from the recorder data sets.

   Note: Purging is performed here so that abends (such as tape errors) do not leave the recorder data sets in a state of reduced integrity.

The data that is purged is determined by the DATE control statement shown in Figure G-1 on page G-2. The entire data set can be purged by specifying DATE=12319999, or a portion of the recorder data set can be purged as follows:

- If only part of a data set is to be purged, define the VSAM REUSE parameter when the CMRDETL recorder data set is defined.

- Allocate a temporary data set, as shown by CMRWRK1 in Figure G-1 on page G-2. CMRPURG uses CMRWRK1 to store records temporarily that will remain on the recorder data set.

- REUSE reorganizes and resets the CMRDETL recorder data sets so that records written to CMRWRK1 from these data sets can be reloaded.

- If NOREUSE is specified, the selected records are deleted from CMRDETL; this can be a time-consuming update to the CMRDETL data set.

Each phase of the archive-purge process is recorded in the Recorder File Purge Report. Figure G-2 on page G-4 shows a typical listing for the CMRDETL recorder data set.

Figure G-2   Sample File Purge Report

```
                    CMRDETL File Purge Report

               CICS MANAGER RECORDER FILE PURGE

FT290I-DETAIL TRANSACTION RECORDER FILE BEING PROCESSED
FT293I-BEGINNING ARCHIVE OF REQUESTED RECORDS
FT294I-ARCHIVE OF REQUESTED RECORDS COMPLETED
FT295I-BEGINNING PURGE OF REQUESTED RECORDS
FT296I-PURGE OF REQUESTED RECORDS COMPLETED
FT297I-CMRWRK1 DATASET FOUND - BEGINNING REORGANIZATION
FT298I-ENTERING SECOND PHASE OF REORGANIZATION
FT301I-REORGANIZATION OF RECORDER FILE COMPLETED

------ RECORDER FILE ------      -- HISTORY FILE ACTIVITY --
     INPUT      PURGED                INPUT      OUTPUT

     000001667  000001666            000000000  000001666
```

If an abend occurs while archiving data, check the messages in the report to determine when it occurred. CMRPURG does not write the same record twice if it exists on both the history and the recorder data sets.

Archive-Purge Completion

When the archive-purge process is complete, restart data collection from CICS with the SMN2 transaction or from an MVS console using FST2. This starts recording to the CMRDETL data set again.

Archiving Dual CMRDETL Data Sets

Any MVS archival utility, such as IDCAMS REPRO, can be used to archive CMRDETL data. The BBI-SS PAS purges all data and reorganizes the file automatically when a switch occurs. The use of CMRPURG to process dual CMRDETL data sets is restricted to archival only. With dual data sets, the archive process is initiated when CMRDETL becomes full, an I/O error occurs, or a switch is manually requested with the FST2 SWITCH command.

BBSAMP member CMRDJCL contains sample JCL to execute CMRPURG when a detail file switch occurs. The following control statements must be included when you use CMRPURG to archive dual CMRDETL data sets:

HISTORY   HISTORY=YES or HISTORY=OUT must be used.

DATE   DATE=12319999 must be used.

LEAVE   Specifies whether to leave data in CMRDETL or purge it after archival. This statement must start in column 1. Valid values are as follows:

    NO   Data is removed from CMRDETL. LEAVE=NO is the default and must be used for single CMRDETL files.

    YES   Data remains in CMRDETL after archival. This should be specified when using dual detail files. It provides HISTORY access to the data after a data set switch occurs.

In addition, you should use the following DCB characteristics for the output data set:

```
DSORG=PS,RECFM=VB,LRECL=4664,BLKSIZE=12000
```

For additional information about preparing and using dual CMRDETL data sets, see

Purging Summary Records from a VSAM Data Set

The CMRSUMD utility summarizes performance data over selected intervals and places summary records in an output VSAM data set. You can create reports from the summary records or view the records themselves with the online HISTORY service, as described in the *MAINVIEW for CICS Online Services Reference Manual*.

CMRPURG can be used to purge selected summary records from the VSAM data set. This allows you to keep some summary records that you may need for long-term reports and remove others that are no longer needed.

The JCL shown in Figure G-1 on page G-2 can be used to run the CMRPURG program to purge summary records. An additional WORKLOAD control statement must be added to the job stream following the SYSIN DD statement. The WORKLOAD control statement specifies which summary records are purged from the VSAM data set.

The WORKLOAD control statement has the following positional parameters:

```
WORKLOAD=wkld,group,time
```

wkld

> Name of the workload used to summarize records. All records are purged by default.

group

> Name of the group of CICS regions combined to create a summary workload. All groups are purged by default.
>
> The group name is specified with the SGROUP control statement of the CMRSUMD utility.

time

> Summarization interval of summary records. All summary intervals are purged by default.

The following examples show how to use the WORKLOAD control statement with the CMRPURG program to purge summary records from a VSAM data set.

```
WORKLOAD=IBMTRANS,*,1440
```

Daily summary records of all groups of the IBMTRANS workload are purged.

```
WORKLOAD=,,60
```

All hourly records from all workloads and groups are purged.

```
WORKLOAD=IBMTRANS,FINAN*,*
```

All summary records from all groups with a prefix of FINAN are purged from the IBMTRANS workload.

```
WORKLOAD=,,*
```

All summary records from all workloads and groups are purged.

Appendix H   User Exit Interface (CMRCUEX)

The CMRCUEX user exit interface provides several facilities. You can

- capture statistics from database products other than DL/I and DB2 in greater detail than normally reported by MAINVIEW for CICS

- add user-defined information to transaction detail history records created by MAINVIEW for CICS

- replace the initial (PCT) program name with the name of a program running at a lower level, in the same way that MAINVIEW for CICS does for supported fourth-generation languages (4GLs)

Initiating Database Calls

CMRCUEX interfaces to the module that MAINVIEW for CICS uses to capture file statistics. You can use the timing module to capture statistics that are not already captured by MAINVIEW for CICS.

For instance, if you use a database other than DL/I or DB2, you may wish to track the time spent in calls to that database on a file name or request type (such as READ or WRITE) level. To do this:

Step 1   Call CMRCUEX with an I parameter to start a clock before executing the database command.

Step 2   Call CMRCUEX with a T parameter to stop the clock after control is returned to your program.

Statistics captured by CMRCUEX are available in the FILE graphs, the HISTORY file expansion, and batch reports. The information is stored in T6EFI, T6EFN, T6EFT, and T6EFC on the CMRDETL file.

There is a maximum of 20 occurrences; therefore, no more than 20 different statistics can be kept, including any FCT-defined files that are already being reported on by MAINVIEW for CICS. When all 20 occurrences have been used, CMRCUEX ignores calls to start a clock and issues a return code of 4.

Adding User Data

CMRCUEX also provides you with the ability to add 18 bytes of identifying information to be included in the transaction history detail record. You can use this information in any way you choose; for example, you might identify transactions by application subsystem so that you can produce a report sorted by this field.

To request that CMRCUEX add user data to the history record, call CMRCUEX with a U parameter and up to 18 characters of user data to be inserted into the CMRDETL record. You can call CMRCUEX at any time before the end of the transaction.

The user data is stored in T6EUDATA on the CMRDETL file.

Initiating Program Calls

MAINVIEW for CICS normally reports the program name that is known to CICS through the PCT. CMRCUEX allows you to override that program name with the program name you prefer to track.

For instance, 4GL programs sometimes provide user exit points that make the name of the 4GL program actually executing available to the user. Including a call to CMRCUEX in the exit program can pass the program name to MAINVIEW for CICS as a substitute for the initial (PCT) program name. To do this, call CMRCUEX with an I parameter to capture the specified program name. If multiple calls are issued, the last program name specified is used.

The program information is stored in T6EPGNM and T6EPTYPE in the CMRDETL file. Statistics captured for you by CMRCUEX are available in the PANEL graphs, the HISTORY file expansion, and batch reporting.

CMRCUEX Rules and Conventions

CMRCUEX must be link-edited with the user program in the same load module. Either allow the linkage editor to resolve the external reference to CMRCUEX (by including the BBLINK library in SYSLIB in the link-edit step) or use the linkage editor INCLUDE control statement to link CMRCUEX into the load module.

When you use the COBOL interface module, both CMRCCUEX and CMRCUEX must be link-edited in the calling program's load module.

Return Codes

Return Code	Meaning
0	Call to CMRCUEX completed successfully.
4	CMRCUEX parameters were correct, but the request could not be serviced for some reason, such as extraction being inactive.
8	CMRCUEX parameters were incomplete or invalid.

Restrictions

Several restrictions apply:

- When timing database calls, MAINVIEW for CICS uses these database IDs:

  ```
  A, C, D, G, I, K, P, S, 1, 2
  ```

  They should not be used for user-defined database types.

- When replacing program names, MAINVIEW for CICS uses these 4GL IDs:

  ```
  A, C, D, G, I, K, L, M, N, S, U
  ```

  They should not be used for user-defined program types.

- When CMRCUEX is called, it does a search of the existing Task Interface Element (TIE) chain to locate the TIE used by the MAINVIEW for CICS task-related user exit. Although the MAINVIEW for CICS TIE is below the 16 MB line, other TIEs may exist if other vendor products are in use. If these other TIEs are above the 16 MB line, the user program must be in 31-bit mode prior to calling CMRCUEX. Otherwise, S0C4 abends may occur.

Sample Uses for CMRCUEX

This section provides examples of Assembler and COBOL statements that call CMRCUEX to

- initiate a database call
- add user data
- replace a program name

Initiating a Database Call

Figure H-1 on page H-5 and Figure H-2 on page H-5 are examples of Assembler and COBOL statements to initiate timing of a user-defined database call for a database identified as B. A similar call, with the exception that CUEXCNTL must be T, is made at the completion of the user-defined database call. When control returns from CMRCUEX, all registers are restored except for registers 0, 1, and 15. Register 15 contains the return code.

Figure H-1   Sample Assembler Statements to Initiate a Database Call

---

```
          MVI    CUEXCNTL,C'I'      Tell CMRCUEX to start clock
          MVI    CUEXRQST,C'D'      Collect database stats
          MVI    CUEXTYPE,C'B'      Identify this database
          MVC    CUEXNAME,file name May contain any identifying info
          LA     R1,CUEXPARM        Pass the parameters to CMRCUEX
          L      R15,=V(CMRCUEX)    Get CMRCUEX's addr from linkage
                                    editor
          BALR   R14,R15            Transfer control to CMRCUEX
          -------
CUEXPARM     DS    0F
CUEXCNTL     DS    C        I=start clock, T=stop clock, U=user data
CUEXDATA     DS    0CL18  Put user data here when CUEXCNTL=U
*---- Use the following fields when starting or stopping clocks
CUEXRQST     DS    C        4=4GL, D=database
CUEXTYPE     DS    C        Identifies 4GL or DB (see restrictions above)
CUEXNAME     DS    CL8      4GL program name or database file name or
                           other identifying information
             DS    CL8      Unused when starting or stopping clocks
```

To invoke CMRCUEX from a COBOL program, you must call
CMRCCUEX rather than CMRCUEX. CMRCCUEX is an interface program
that translates the parameter passing protocol from the one used by COBOL
to the one expected by CMRCUEX. CMRCCUEX then invokes CMRCUEX.
Figure H-2 shows an example of the processing.

Figure H-2   Sample COBOL Statements to Initiate a Database Call

---

```
01 CMRCUEX-PARAMETERS.
        03  CUEX-INIT-TERM-OR-USER-CALL  PIC X.
        03  CUEX-USER-DATA               PIC X(18).
        03  CUEX-TIMING-CTL-FIELDS REDEFINES CUEX-USER-DATA.
        05 CUEX-4GL-OR-DB                PIC X.
        05 CUEX-4GL-OR-DB-ID             PIC X. (See restrictions above)
        05 CUEX-FILE-OR-PGM-NAME         PIC X(8).
        05 FILLER                        PIC X(8).
        -----------
        MOVE 'I' TO CUEX-INIT-TERM-OR-USER-CALL
        MOVE 'D' TO CUEX-4GL-OR-DB
        MOVE 'B' TO CUEX-4GL-OR-DB-ID
        MOVE file name TO CUEX-FILE-OR-PGM-NAME
        CALL 'CMRCCUEX' USING CMRCUEX-PARAMETERS.
```

Adding Data to the User Data Field

Figure H-3 shows examples of using CMRCUEX to add data to user data fields.

Figure H-3   Sample Statements to Store User Data

```
In Assembler:
      MVI   CUEXCNTL,C'U'        Indicate you want to store user data
      MVC   CUEXDATA,user data   Give it your user data
      LA    R1,CUEXCNTL          Pass parameters to CMRCUEX
      L     R15,=V(CMRCUEX)      Get addr of CMRCUEX from linkage editor
      BALR  R14,R15              Transfer control to CMRCUEX

In COBOL:
      MOVE 'U' TO CUEX-INIT-TERM-OR-USER-CALL
      MOVE user data TO CUEX-USER-DATA
      CALL 'CMRCCUEX' USING CMRCUEX-PARAMETERS.
```

Note: It is also possible to supply a field value for TGEUSER in the detail record. Refer to BBSAMP member GENEROL, which utilizes this facility.

Replacing Program Names

To replace a program name, call CMRCUEX at the time replacement information becomes available. Figure H-4 on page H-7 shows examples of Assembler and COBOL statements to replace program names.

Figure H-4   Sample Statements to Replace a Program Name

```
In Assembler:
        MVI    CUEXCNTL,C'I'      Must always be 'I'
        MVI    CUEXRQST,C'4'      Replace program name
        MVI    CUEXTYPE,C'J'      User-chosen identifying code
        MVC    CUEXNAME,pgm name  May contain any identifying info
        LA     R1,CUEXPARM        Pass the parameters to CMRCUEX
        L      R15,=V(CMRCUEX)    Get CMRCUEX's addr from linkage editor
        BALR   R14,R15            Transfer control to CMRCUEX

In COBOL:
        MOVE 'I' TO CUEX-INIT-TERM-OR-USER-CALL
        MOVE '4' TO CUEX-4GL-OR-DB
        MOVE 'J' TO CUEX-4GL-OR-DB-ID
        MOVE pgm name TO CUEX-FILE-OR-PGM-NAME
        CALL 'CMRCCUEX' USING CMRCUEX-PARAMETERS.
```

Glossary

This glossary defines BMC Software terminology. Other dictionaries and glossaries can be used in conjunction with this glossary.

Since this glossary pertains to BMC Software-related products, some of the terms defined might not appear in this book.

To help you find the information you need, this glossary uses the following cross-references:

Contrast with indicates a term that has a contrary or contradictory meaning.

See indicates an entry that is a synonym or contains expanded information.

See also indicates an entry that contains related information.

action
Defined operation, such as modifying a MAINVIEW window, that is performed in response to a command. *See* object.

active window
Any MAINVIEW window in which data can be refreshed. *See* alternate window, current window, window.

administrative view
Display from which a product's management tasks are performed, such as the DSLIST view for managing historical data sets. *See* view.

ALT WIN field
Input field that allows you to specify the window identifier for an alternate window where the results of a hyperlink are displayed. *See* alternate window.

Alternate Access
See MAINVIEW Alternate Access.

alternate form
View requested through the FORM command that changes the format of a previously displayed view to show related information. *See also* form, query.

alternate window   (1) Window that is specifically selected to display the results of a hyperlink. (2) Window whose identifier is defined to the ALT WIN field. *Contrast with* current window. *See* active window, window, ALT WIN field.

analyzer   (1) Online display that presents a snapshot of status and activity data and indicates problem areas. (2) Component of CMF MONITOR. *See* CMF MONITOR Analyzer.

application   (1) Program that performs a specific set of tasks within a MAINVIEW product. (2) In MAINVIEW VistaPoint, combination of workloads to enable display of their transaction performance data in a single view.

application trace   *See* trace.

ASCH workload   Workload comprising Advanced Program-to-Program Communication (APPC) address spaces.

AutoCustomization   Online facility for customizing the installation of products. AutoCustomization provides an ISPF panel interface that both presents customization steps in sequence and provides current status information about the progress of the installation.

automatic screen update
Usage mode wherein the currently displayed screen is refreshed automatically with new data at an interval you specify. Invoked by the ASU command.

batch workload   Workload consisting of address spaces running batch jobs.

BBI   Basic architecture that distributes work between workstations and multiple OS/390 targets for BMC Software MAINVIEW products.

BBI-SS PAS   *See* BBI subsystem product address space.

BBI subsystem product address space (BBI-SS PAS)
OS/390 subsystem address space that manages communication between local and remote systems and that contains one or more of the following products:

- MAINVIEW AutoOPERATOR
- MAINVIEW for CICS
- MAINVIEW for DB2
- MAINVIEW for DBCTL
- MAINVIEW for IMS Online
- MAINVIEW for MQSeries (formerly Command MQ for S/390)
- MAINVIEW SRM
- MAINVIEW VistaPoint (for CICS, DB2, DBCTl, and IMS workloads)

BBPARM   *See* parameter library.

BBPROC	*See* procedure library.
BBPROF	*See* profile library.
BBSAMP	*See* sample library.
BBV	*See* MAINVIEW Alternate Access.
BBXS	BMC Software Subsystem Services. Common set of service routines loaded into common storage and used by several BMC Software MAINVIEW products.
border	Visual indication of the boundaries of a window.
bottleneck analysis	Process of determining which resources have insufficient capacity to provide acceptable service levels and that therefore can cause performance problems.
CA-Disk	Data management system by Computer Associates that replaced the DMS product.
CAS	Coordinating address space. One of the address spaces used by the MAINVIEW windows environment architecture. The CAS supplies common services and enables communication between linked systems. Each OS/390 or z/OS image requires a separate CAS. Cross-system communication is established through the CAS using VTAM and XCF communication links.
CFMON	*See* coupling facility monitoring.
chart	Display format for graphical data. *See also* graph.
CICSplex	User-defined set of one or more CICS systems that are controlled and managed as a single functional entity.
CMF MONITOR	Comprehensive Management Facility MONITOR. Product that measures and reports on all critical system resources, such as CPU, channel, and device usage; memory, paging, and swapping activity; and workload performance.

CMF MONITOR Analyzer
Batch component of CMF MONITOR that reads the SMF user and 70 series records created by the CMF MONITOR Extractor and/or the RMF Extractor and formats them into printed system performance reports.

CMF MONITOR Extractor
Component of CMF that collects performance statistics for CMF MONITOR Analyzer, CMF MONITOR Online, MAINVIEW for OS/390, and RMF postprocessor. *See* CMF MONITOR Analyzer, CMF MONITOR Online, MAINVIEW for OS/390.

CMF MONITOR Online

Component of CMF that uses the MAINVIEW window interface to present data on all address spaces, their use of various system resources, and the delays that each address space incurs while waiting for access to these resources. *See* CMF MONITOR, MAINVIEW for OS/390.

CMF Type 79 API   Application programming interface, provided by CMF, that provides access to MAINVIEW SMF-type 79 records.

CMFMON   Component of CMF MONITOR that simplifies online retrieval of information about system hardware and application performance and creates MAINVIEW SMF-type 79 records.

The CMFMON *online facility* can be used to view data in one or more formatted screens.

The CMFMON *write facility* can be used to write collected data as MAINVIEW SMF-type 79 records to an SMF or sequential data set.

CMRDETL   MAINVIEW for CICS data set that stores detail transaction records (type 6E) and abend records (type 6D). Detail records are logged for each successful transaction. Abend records are written when an abend occurs. Both records have the same format when stored on CMRDETL.

CMRSTATS   MAINVIEW for CICS data set that stores both CICS operational statistic records, at five-minute intervals, and other records, at intervals defined by parameters specified during customization (using CMRSOPT).

column   Vertical component of a view or display, typically containing fields of the same type of information, that varies by the objects associated in each row.

collection interval   Length of time data is collected. *See also* delta mode, total mode.

command delimiter   Special character, usually a **;** (semicolon), used to stack commands typed concurrently on the COMMAND line for sequential execution.

COMMAND line   Line in the control area of the display screen where primary commands can be typed. *Contrast with* line command column.

Command MQ Automation D/S

Command MQ agents, which provide local proactive monitoring for both MQSeries and MSMQ (Microsoft message queue manager). The Command MQ agents operate at the local node level where they continue to perform functions regardless of the availability of the MQM (message queue manager) network. Functionality includes automatic monitoring and restarts of channels, queue managers, queues and command servers. In cases where automated recovery is not possible, the agents transport critical alert information to a central console.

Command MQ Automation S/390

Command MQ component, which monitors the MQM (message queue manager) networks and intercedes to perform corrective actions when problems arise. Solutions include:

- Dead-Letter Queue management
- System Queue Archival
- Service Interval Performance solutions
- Channel Availability

These solutions help ensure immediate relief to some of the most pressing MQM operations and performance problems.

Command MQ for D/S

Command MQ for D/S utilizes a true client/server architecture and employs resident agents to provide configuration, administration, performance monitoring and operations management for the MQM (message queue manager) network.

Command MQ for S/390

See MAINVIEW for MQSeries.

COMMON STORAGE MONITOR

Component of MAINVIEW for OS/390 that monitors usage and reconfigures OS/390 or z/OS common storage blocks.

composite workload

Workload made up of a WLM workload or other workloads, which are called *constituent workloads*.

constituent workload

Member of a composite workload. Constituent workloads in a composite usually belong to a single workload class, but sometimes are mixed.

contention   Occurs when there are more requests for service than there are servers available.

context   In a Plex Manager view, field that contains the name of a target or group of targets specified with the CONTEXT command. *See* scope, service point, SSI context, target context.

CONTEXT command

Specifies either a MAINVIEW product and a specific target for that product (*see* target context) or a MAINVIEW product and a name representing one or more targets (*see* SSI context) for that product.

control statement   (1) Statement that interrupts a sequence of instructions and transfers control to another part of the program. (2) Statement that names samplers and other parameters that configure the MAINVIEW components to perform specified functions. (3) In CMF MONITOR, statement in a parameter library member used to identify a sampler in the extractor or a report in the analyzer, or to describe either component's processing requirements to the operating system.

coupling facility monitoring (CFMON)

Coupling facility views that monitor the activity of your system's coupling facilities.

current data   Data that reflects the system in its current state. The two types of current data are real-time data and interval data. *Contrast with* historical data. *See also* interval data, real-time data.

current window   In the MAINVIEW window environment, window where the main dialog with the application takes place. The current window is used as the default window destination for commands issued on the COMMAND line when no window number is specified. *Contrast with* alternate window. *See* active window, window.

DASD   (Direct Access Storage Device) (1) A device with rotating recording surfaces that provides immediate access to stored data. (2) Any device that responds to a DASD program.

DASD ADVISOR   An interactive software tool that diagnoses DASD performance problems and makes recommendations to reduce overall service time. This tool measures and reports on the operational performance of IBM and IBM-compatible devices.

data collector   Program that belongs to a MAINVIEW product and that collects data from various sources and stores the data in records used by views. For example, MAINVIEW for OS/390 data collectors obtain data from OS/390 or z/OS services, OS/390 or z/OS control blocks, CMF MONITOR Extractor control blocks, and other sources. *Contrast with* extractor.

delta mode   (1) In MAINVIEW for DB2 analyzer displays, difference between the value sampled at the start of the current statistics interval and the value sampled by the current analyzer request. *See also* statistics interval. (2) In CMFMON, usage mode wherein certain columns of data reflect the difference in values between one sample cycle and the next. Invoked by the DELta ON command. *See also* collection interval, sample cycle, total mode.

DFSMS   (Data Facility Storage Management System) Data management, backup, and HSM software from IBM for OS/390 or z/OS mainframes.

DMR   *See* MAINVIEW for DB2.

DMS	(Data Management System) *See* CA-Disk.
DMS2HSM	*See* MAINVIEW SRM DMS2HSM.
DSO	(Data Set Optimizer) CMF MONITOR Extractor component that uses CMF MONITOR Extractor data to produce reports specifying the optimal ordering of data sets on moveable head devices.
EasyHSM	*See* MAINVIEW SRM EasyHSM.
EasyPOOL	*See* MAINVIEW SRM EasyPOOL.
EasySMS	*See* MAINVIEW SRM EasySMS.
element	(1) Data component of a data collector record, shown in a view as a field. (2) Internal value of a field in a view, used in product functions.
element help	Online help for a field in a view. The preferred term is *field help*.
Enterprise Storage Automation	
	See MAINVIEW SRM Enterprise Storage Automation.
event	A message issued by Enterprise Storage Automation. User-defined storage occurrences generate events in the form of messages. These events provide an early warning system for storage problems and are routed to user-specified destinations for central viewing and management.
Event Collector	Component for MAINVIEW for IMS Online, MAINVIEW for IMS Offline, and MAINVIEW for DBCTL that collects data about events in the IMS environment. This data is required for Workload Monitor and optional for Workload Analyzer (except for the workload trace service). This data also is recorded as transaction records (X'FA') and program records (X'F9') on the IMS system log for later use by the MAINVIEW for IMS Offline components: Performance Reporter and Transaction Accountant.
expand	Predefined link from one display to a related display. *See also* hyperlink.
extractor	Program that collects data from various sources and keeps the data control blocks to be written as records. Extractors obtain data from services, control blocks, and other sources. *Contrast with* data collector.
extractor interval	*See* collection interval.
fast path	Predefined link between one screen and another. To use the fast path, place the cursor on a single value in a field and press **Enter**. The resulting screen displays more detailed information about the selected value. *See also* hyperlink.

field   Group of character positions within a screen or report used to type or display specific information.

field help   Online help describing the purpose or contents of a field on a screen. To display field help, place the cursor anywhere in a field and press **PF1** (HELP). In some products, field help is accessible from the screen help that is displayed when you press **PF1**.

filter   Selection criteria used to limit the number of rows displayed in a view. Data that does not meet the selection criteria is not displayed. A filter is composed of an element, an operator, and an operand (a number or character string). Filters can be implemented in view customization, through the PARm/QPARm commands, or through the Where/QWhere commands. Filters are established against elements of data.

fire   The term used to indicate that an event has triggered an action. In MAINVIEW AutoOPERATOR, when a rule selection criteria matches an incoming event and *fires*, the user-specified automation actions are performed. This process is also called *handling* the event.

fixed field   Field that remains stationary at the left margin of a screen that is scrolled either right or left.

FOCAL POINT   MAINVIEW product that displays a summary of key performance indicators across systems, sites, and applications from a single terminal.

form   One of two constituent parts of a view; the other is query. A form defines how the data is presented; a query identifies the data required for the view. *See also* query, view.

full-screen mode   Display of a MAINVIEW product application or service on the entire screen. There is no window information line. *Contrast with* windows mode.

global command   Any MAINVIEW window interface command that can affect all windows in the window area of a MAINVIEW display.

graph   Graphical display of data that you select from a MAINVIEW window environment view. *See also* chart.

hilevel   For MAINVIEW products, high-level data set qualifier required by a site's naming conventions.

historical data   (1) Data that reflects the system as it existed at the end of a past recording interval or the duration of several intervals. (2) Any data stored in the historical database and retrieved using the TIME command. *Contrast with* current data, interval data and real-time data.

historical database Collection of performance data written at the end of each installation-defined recording interval and containing up to 100 VSAM clusters. Data is extracted from the historical database with the TIME command. *See* historical data.

historical data set In MAINVIEW products that display historical data, VSAM cluster file in which data is recorded at regular intervals.

HSM (Hierarchical Storage Management) Automatic movement of files from hard disk to slower, less-expensive storage media. The typical hierarchy is from magnetic disk to optical disk to tape.

hyperlink (1) Preset field in a view or an EXPAND line on a display that permits you to

- access cursor-sensitive help
- issue commands
- link to another view or display

The transfer can be either within a single product or to a related display/view in a different BMC Software product. Generally, hyperlinked fields are highlighted. (2) Cursor-activated short path from a topic or term in online help to related information. *See also* fast path.

Image log Collection of screen-display records. Image logs can be created for both the BBI-SS PAS and the BBI terminal session (TS).

The BBI-SS PAS Image log consists of two data sets that are used alternately: as one fills up, the other is used. Logging to the BBI-SS PAS Image log stops when both data sets are filled and the first data set is not processed by the archive program.

The TS Image log is a single data set that wraps around when full.

IMSPlex System Manager (IPSM)
MVIMS Online and MVDBC service that provides Single System Image views of resources and bottlenecks for applications across one or more IMS regions and systems.

interval data Cumulative data collected during a collection interval. Intervals usually last from 15 to 30 minutes depending on how the recording interval is specified during product customization. *Contrast with* historical data.

Note: If change is made to the workloads, a new interval will be started.

See also current data and real-time data.

InTune Product for improving application program performance. It monitors the program and provides information used to reduce bottlenecks and delays.

IRUF   IMS Resource Utilization File (IRUF). IRUFs can be either detail (one event, one record) or summarized (more than one event, one record). A detail IRUF is created by processing the IMS system log through a program called IMFLEDIT. A summarized IRUF is created by processing one or more detail IRUFs, one or more summarized IRUFs, or a combination of both, through a sort program and the TASCOSTR program.

job activity view   Report about address space consumption of resources. *See* view.

journal   Special-purpose data set that stores the chronological records of operator and system actions.

Journal log   Collection of messages. Journal logs are created for both the BBI-SS PAS and the BBI terminal session (TS).

The BBI-SS PAS Journal log consists of two data sets that are used alternately: as one fills up, the other is used. Logging to the BBI-SS PAS Journal log stops when both data sets are filled and the first data set is not being processed by the archive program.

The TS Journal log is a single data set that wraps around when full.

line command   Command that you type in the line command column in a view or display. Line commands initiate actions that apply to the data displayed in that particular row.

line command column
Command input column on the left side of a view or display. *Contrast with* COMMAND line.

Log Edit   In the MAINVIEW for IMS Offline program named IMFLEDIT, function that extracts transaction (X'FA') and program (X'F9') records from the IMS system log. IMFLEDIT also extracts certain records that were recorded on the system log by IMS. IMFLEDIT then formats the records into a file called the IMS Resource Utilization File (IRUF).

MAINVIEW   BMC Software integrated systems management architecture.

MAINVIEW Alarm Manager (MV ALARM)
In conjunction with other MAINVIEW products, notifies you when an exception occurs. MAINVIEW Alarm Manager is capable of monitoring multiple systems simultaneously, which means that MAINVIEW Alarm Manager installed on one system keeps track of your entire sysplex. You can then display a single view that shows exceptions for all MAINVIEW performance monitors within your OS/390 or z/OS enterprise.

MAINVIEW Alternate Access
> Enables MAINVIEW products to be used without TSO by providing access through EXCP and VTAM interfaces.

MAINVIEW Application Program Interface (MVAPI)
> A CLIST- or REXX-based, callable interface that allows MAINVIEW AutoOPERATOR EXECs to access MAINVIEW monitor product view data.

MAINVIEW AutoOPERATOR
> Product that uses tools, techniques, and facilities to automate routine operator tasks and provide online performance monitoring, and that achieves high availability through error minimization, improved productivity, and problem prediction and prevention.

MAINVIEW control area
> In the MAINVIEW window environment, first three lines at the top of the view containing the window information line and the COMMAND, SCROLL, CURR WIN, and ALT WIN lines. The control area cannot be customized and is part of the information display. *Contrast with* MAINVIEW display area, MAINVIEW window area.

MAINVIEW Desktop Version of the MAINVIEW window interface designed to run on OS/2 and Windows workstations.

MAINVIEW display area
> *See* MAINVIEW window area.

MAINVIEW Explorer Product that provides access to MAINVIEW products from a Web browser running under Windows. MAINVIEW Explorer replaces MAINVIEW Desktop.

MAINVIEW for CICS Product (formerly MV MANAGER for CICS) that provides real-time application performance analysis and monitoring for CICS system management.

MAINVIEW for DB2 Product (formerly MV MANAGER for DB2) that provides real-time and historical application performance analysis and monitoring for DB2 subsystem management.

MAINVIEW for DBCTL (MVDBC)
> Product that provides real-time application performance analysis and monitoring for DBCTL management.

MAINVIEW for IMS (MVIMS) Offline
> Product with a Performance Reporter component that organizes data and prints reports used to analyze IMS performance and a Transaction Accountant component that produces cost accounting and user charge-back records and reports.

MAINVIEW for IMS (MVIMS) Online

Product that provides real-time application performance analysis and monitoring for IMS management.

MAINVIEW for IP   Product that monitors OS/390 and z/OS mission-critical application performance as it relates to IP stack usage. Collected data includes: connections, response time statistics, application availability, application throughput, and IP configuration.

MAINVIEW for Linux–Servers

Product that allows you to monitor the performance of your Linux systems from the MAINVIEW windows interface.

MAINVIEW for MQSeries (formerly known as Command MQ for S/390)

Delivers comprehensive capabilities for configuration, administration, performance monitoring and operations management for an entire MQM (message queue manager) network.

MAINVIEW for OS/390

System management application (known as MAINVIEW for MVS prior to version 2.5). Built upon the MAINVIEW window environment architecture, it uses the window interface to provide access to system performance data and other functions necessary in the overall management of an enterprise.

MAINVIEW for UNIX System Services

System management application that allows you to monitor the performance of the Unix System Services from a MAINVIEW window interface.

MAINVIEW for VTAM

Product that displays application performance data by application, transaction ID, and LU name. This collected data includes connections, response time statistics, application availability, and application throughput.

MAINVIEW for WebSphere

Product that provides Web monitoring and management for applications integrated with IBM WebSphere Application Server for OS/390 or z/OS.

MAINVIEW Selection Menu

ISPF selection panel that provides access to all MAINVIEW windows-mode and full-screen mode products.

MAINVIEW SRM   *See* MAINVIEW Storage Resource Manager (SRM).

MAINVIEW SRM DMS2HSM

Product that facilitates the conversion of CA-Disk, formerly known as DMS, to HSM.

MAINVIEW SRM EasyHSM

Product that provides online monitoring and reporting to help storage managers use DFHSM efficiently.

MAINVIEW SRM EasyPOOL

Product that provides control over data set allocation and enforcement of allocation and naming standards. EasyPOOL functions operate at the operating system level to intercept normal job processing, thus providing services without any JCL changes.

MAINVIEW SRM EasySMS

Product that provides tools that aid in the conversion to DFSMS and provides enhancement to the DFSMS environment after implementation. EasySMS consists of the EasyACS functions, the SMSACSTE function, and the Monitoring and Positioning Facility.

MAINVIEW SRM Enterprise Storage Automation

Product that delivers powerful event generation and storage automation technology across the storage enterprise. Used in conjunction with MAINVIEW AutoOPERATOR, automated solutions to perform pool, volume, application, or data set-level manipulation can be created and used in response to any condition or invoked to perform ad hoc requests.

MAINVIEW SRM SG-Auto

Product that provides early warning notification of storage anomalies and automated responses to those anomalies based on conditions in the storage subsystem.

MAINVIEW SRM SG-Control

Product that provides real-time monitoring, budgeting, and control of DASD space utilization.

MAINVIEW SRM StopX37/II

Product that provides enhancements to OS/390 or z/OS space management, reducing the incidence of space-related processing problems. The StopX37/II functions operate at the system level to intercept abend conditions or standards violations, thus providing services without any JCL changes.

MAINVIEW SRM StorageGUARD

Product that monitors and reports on DASD consumption and provides historical views to help control current and future DASD usage.

MAINVIEW Storage Resource Manager (SRM)

Suite of products that assist in all phases of OS/390 or z/OS storage management. MAINVIEW SRM consists of products that perform automation, reporting, trend analysis, and error correction for storage management.

MAINVIEW SYSPROG Services

See SYSPROG services.

MAINVIEW VistaPoint

Product that provides enterprise-wide views of performance. Application and workload views are available for CICS, DB2, DBCTL, IMS, OS/390, or z/OS. Data is summarized at the level of detail needed; for example, views can be for a single target, an OS/390 or z/OS image, or an entire enterprise.

MAINVIEW window area

Portion of the information display that is not the control area and in which views are displayed and windows opened. It includes all but the first three lines of the information display. *Contrast with* MAINVIEW control area.

monitor

Online service that measures resources or workloads at user-defined intervals and issues warnings when user-defined thresholds are exceeded.

Multi-Level Automation (MLA)

The user-defined, multiple step process in Enterprise Storage Automation that implements solutions in a tiered approach, where solutions are invoked one after another until the condition is resolved.

MVALARM   *See* MAINVIEW Alarm Manager.

MVAPI   *See* MAINVIEW Application Program Interface.

MVCICS   *See* MAINVIEW for CICS.

MVDB2   *See* MAINVIEW for DB2.

MVDBC   *See* MAINVIEW for DBCTL.

MVIMS   *See* MAINVIEW for IMS.

MVIP   *See* MAINVIEW for IP.

MVLNX   *See* MAINVIEW for Linux–Servers.

MVMQ   *See* MAINVIEW for MQSeries.

MVMVS   *See* MAINVIEW for OS/390.

MVScope   MAINVIEW for OS/390 application that traces both CPU usage down to the CSECT level and I/O usage down to the channel program level.

MVSRM   *See* MAINVIEW Storage Resource Manager (SRM).

MVSRMHSM   *See* MAINVIEW SRM EasyHSM.

MVSRMSGC	*See* MAINVIEW SRM SG-Control.
MVSRMSGD	*See* MAINVIEW SRM StorageGUARD.
MVSRMSGP	*See* MAINVIEW SRM StorageGUARD.
MVUSS	*See* MAINVIEW for UNIX System Services.
MVVP	*See* MAINVIEW VistaPoint.
MVVTAM	*See* MAINVIEW for VTAM.
MVWEB	*See* MAINVIEW for WebSphere.
nested help	Multiple layers of help pop-up windows. Each successive layer is accessed by clicking a hyperlink from the previous layer.
object	Anything you can manipulate as a single unit. MAINVIEW objects can be any of the following: product, secondary window, view, row, column, or field.
	You can issue an action against an object by issuing a line command in the line command column to the left of the object. *See* action.
OMVS workload	Workload consisting of OS/390 OpenEdition address spaces.
online help	Help information that is accessible online.

OS/390 and z/OS Installer

BMC Software common installation system for mainframe products.

OS/390 product address space (PAS)

Address space containing OS/390 or z/OS data collectors, including the CMF MONITOR Extractor. Used by MAINVIEW for OS/390, MAINVIEW for UNIX System Services, and CMF MONITOR products. *See* PAS.

parameter library	Data set consisting of members that contain parameters for specific MAINVIEW products or a support component There can be several versions:

- the distributed parameter library, called BBPARM
- a site-specific parameter library or libraries

These can be

- a library created by AutoCustomization, called UBBPARM
- a library created manually, with a unique name

PAS Product address space. Used by the MAINVIEW products. Contains data collectors and other product functions. *See also* OS/390 product address space (PAS) *and* BBI subsystem product address space (BBI-SS PAS).

performance group workload

Collection of address spaces defined to OS/390 or z/OS. If you are running OS/390 or z/OS with WLM in compatibility mode, MAINVIEW for OS/390 creates a performance group workload instead of a service class.

PERFORMANCE MANAGER

MAINVIEW for CICS online service for monitoring and managing current performance of CICS regions.

Performance Reporter (MVIMS)

MVIMS Offline component that organizes data and prints reports that can be used to analyze IMS performance.

Performance Reporter

Product component that generates offline batch reports. The following products can generate these reports:

- MAINVIEW for DB2
- MAINVIEW for CICS

Plex Manager Product through which cross-system communication, MAINVIEW security, and an SSI context are established and controlled. Plex Manager is shipped with MAINVIEW window environment products as part of the coordinating address space (CAS) and is accessible as a menu option from the MAINVIEW Selection Menu.

pop-up display Full-screen panel that displays additional information about a selected event in a detail trace.

pop-up window Window containing help information that, when active, overlays part of the window area. A pop-up window is displayed when you issue the HELP command while working in windows-mode.

PRGP workload In MVS/SP 5.0 or earlier, or in compatibility mode in MVS/SP 5.1 or later, composite of service classes. MAINVIEW for OS/390 creates a performance group workload for each performance group defined in the current IEAIPS*xx* member.

procedure library Data set consisting of members that contain executable procedures used by MAINVIEW AutoOPERATOR. These procedures are execute command lists (EXECs) that automate site functions. There can be several versions:

- the distributed parameter library, called BBPROC
- a site-specific parameter library or libraries

These can be

- a library created by AutoCustomization, called UBBPROC
- a library created manually, with a unique name

The site-created EXECs can be either user-written or customized MAINVIEW AutoOPERATOR-supplied EXECs from BBPROC.

product address space
See PAS.

profile library Data set consisting of members that contain profile information and cycle refresh definitions for a terminal session connected to a BBI-SS PAS. Other members are dynamically created by MAINVIEW applications. There can be several versions:

- the distributed profile library, called BBPROF
- a site-specific profile library or libraries

These can be

- a library created by AutoCustomization, called SBBPROF
- a library created manually, with a unique name

The site library is a common profile shared by all site users. The terminal session CLIST creates a user profile automatically if one does not exist; it is called userid.BBPROF, where userid is your logon ID. User profile libraries allow each user to specify unique PF keys, CYCLE commands, target system defaults, a Primary Option Menu, and a unique set of application profiles.

query One of two constituent parts of a view; the other is form. A query defines the data for a view; a form defines the display format. *See also* form, view.

real-time data Performance data as it exists at the moment of inquiry. Real-time data is recorded during the smallest unit of time for data collection. *Contrast with* historical data. *See also* current data and interval data.

Resource Analyzer Online real-time displays used to analyze IMS resources and determine which are affected by specific workload problems.

Resource Monitor   Online data collection services used to monitor IMS resources and issue warnings when defined utilization thresholds are exceeded.

row   (1) Horizontal component of a view or display comprising all the fields pertaining to a single device, address space, user, and so on. (2) Horizontal component of a DB2 table consisting of a sequence of values, one for each column of the table.

RxD2   Product that provides access to DB2 from REXX. It provides tools to query the DB2 catalog, issue dynamic SQL, test DB2 applications, analyze EXPLAIN data, generate DDL or DB2 utility JCL, edit DB2 table spaces, perform security administration, and much more.

sample cycle   Time between data samples.

For the CMF MONITOR Extractor, this is the time specified in the extractor control statements (usually 1 to 5 seconds).

For real-time data, the cycle is not fixed. Data is sampled each time you press **Enter**.

sample library   Data set consisting of members each of which contains one of the following items:

- sample JCL that can be edited to perform specific functions
- macro that is referenced in the assembly of user-written services
- sample user exit routine

There can be several versions:

- the distributed sample library, called BBSAMP
- a site-specific sample library or libraries

These can be

- a library created by AutoCustomization, called UBBSAMP
- a library created manually, with a unique name

sampler   Program that monitors a specific aspect of system performance. Includes utilization thresholds used by the Exception Monitor. The CMF MONITOR Extractor contains samplers.

SBBPROF   *See* profile library.

scope   Subset of an SSI context. The scope could be all the data for the context or a subset of data within the context. It is user- or site-defined. *See* SSI context, target.

screen definition   Configuration of one or more views that have been stored with the SAVEScr command and assigned a unique name. A screen includes the layout of the windows and the view, context, system, and product active in each window.

selection view   In MAINVIEW products, view displaying a list of available views.

service class workload

Collection of address spaces defined to OS/390 or z/OS. If you are running Workload Manager (WLM) in goal mode, MAINVIEW for OS/390 creates a service class workload for each service class that you define through WLM definition dialogs.

If you are running MVS 4.3 or earlier, or MVS/SP 5.1 or later with WLM in compatibility mode, OS/390 creates a performance group workload instead of a service class. *See* performance group workload.

service objective   Workload performance goal, specified in terms of response time for TSO workloads or turnaround time for batch workloads. Performance group workloads can be measured by either objective. Composite workload service objectives consist of user-defined weighting factors assigned to each constituent workload. For compatibility mode, neither OS/390 nor z/OS provides any way to measure service.

service point   Specification, to MAINVIEW, of the services required to enable a specific product. Services can be actions, selectors, or views. Each target (for example, CICS, DB2, or IMS) has its own service point.

The PLEX view lists all the defined service points known to the CAS to which the terminal session is connected.

service request block (SRB)

Control block that represents a routine to be dispatched. SRB mode routines generally perform work for the operating system at a high priority. An SRB is similar to a task control block (TCB) in that it identifies a unit of work to the system. *See also* task control block.

service select code   Code entered to invoke analyzers, monitors, and general services. This code is also the name of the individual service.

session   Total period of time an address space has been active. A session begins when monitoring can be performed. If the product address space (PAS) starts after the job, the session starts with the PAS.

SG-Auto   *See* MAINVIEW SRM SG-Auto.

SG-Control   *See* MAINVIEW SRM SG-Control.

single system image (SSI)

Feature of the MAINVIEW window environment architecture where you can view and perform actions on multiple OS/390or z/OS systems as though they were a single system. The rows of a single tabular view can contain rows from different OS/390 or z/OS images.

Skeleton Tailoring Facility

A facility in MAINVIEW AutoOPERATOR that allows skeleton JCL to be used during job submission. Skeleton JCL can contain variables within the JCL statements to be substituted with data values at job submission time. Directive statements can be used in the skeleton JCL to cause the repetition of a set of skeleton statements. This facility functions similar to the TSO skeleton tailoring facility**.**

SRB   *See* service request block.

SSI   *See* single system image.

SSI context   Name created to represent one or more targets for a given product. *See* context, target.

started task workload

Address spaces running jobs that were initiated programmatically.

statistics interval   For MAINVIEW for DB2, cumulative count within a predefined interval (30-minute default set by the DB2STATS parameter in the distributed BBPARM member BBIISP00) for an analyzer service DELTA or RATE display. Specifying the DELTA parameter displays the current value as the difference between the value sampled by the current analyzer request and the value sampled at the start of the current interval. Specifying the RATE parameter displays the current value by minute (DELTA divided by the number of elapsed minutes).

stem variables   A REXX facility, supported in MAINVIEW AutoOPERATOR REXX EXECs and the Skeleton Tailoring Facility, where variable names end with a period followed by a number, such as &POOL.1. This configuration allows each variable to actually represent a table or array of data, with the zero variable containing the number of entries in the array. For example, &POOL.0 = 5 would indicate variables &POOL.1 through &POOL.5 exist.

StopX37/II   *See* MAINVIEW SRM StopX37/II.

StorageGUARD   *See* MAINVIEW SRM StorageGUARD.

summary view   View created from a tabular view using the Summarize option in view customization. A summary view compresses several rows of data into a single row based on the summarize criteria.

SYSPROG services Component of MAINVIEW for OS/390. Over 100 services that detect, diagnose, and correct OS/390 or z/OS system problems as they occur. Accessible from the OS/390 Performance and Control Main Menu. Note that this component is also available as a stand-alone product MAINVIEW SYSPROG Services.

system resource *See* object.

target Entity monitored by one or more MAINVIEW products, such as an OS/390 or z/OS image, an IMS or DB2 subsystem, a CICS region, or related workloads across systems. *See* context, scope, SSI context.

target context Single target/product combination. *See* context.

TASCOSTR MAINVIEW for IMS Offline program that summarizes detail and summary IMS Resource Utilization Files (IRUFs) to be used as input to the offline components.

task control block (TCB)
Address space-specific control block that represents a unit of work that is dispatched in the address space in which it was created. *See also* service request block.

TCB *See* task control block.

terminal session (TS)
Single point of control for MAINVIEW products, allowing data manipulation and data display and providing other terminal user services for MAINVIEW products. The terminal session runs in a user address space (either a TSO address space or a stand-alone address space for EXCP/VTAM access).

TDIR *See* trace log directory.

threshold Specified value used to determine whether the data in a field meets specific criteria.

TLDS *See* trace log data set.

total mode Usage mode in CMFMON wherein certain columns of data reflect the cumulative value between collection intervals. Invoked by the DELta OFF command. *See also* collection interval, delta mode.

trace (1) Record of a series of events chronologically listed as they occur. (2) Online data collection and display services that track transaction activity through DB2, IMS, or CICS.

trace log data set (TLDS)
> Single or multiple external VSAM data sets containing summary or detail trace data for later viewing or printing. The trace log(s) can be defined as needed or dynamically allocated by the BBI-SS PAS. Each trace request is assigned its own trace log data set(s).

trace log directory (TDIR)
> VSAM linear data set containing one entry for each trace log data set. Each entry indicates the date and time of data set creation, the current status of the data set, the trace target, and other related information.

transaction   Specific set of input data that initiates a predefined process or job.

Transaction Accountant
> MVIMS Offline component that produces cost accounting and user charge-back records and reports.

TS   *See* terminal session.

TSO workload   Workload that consists of address spaces running TSO sessions.

UAS   *See* user address space.

UBBPARM   *See* parameter library.

UBBPROC   *See* procedure library.

UBBSAMP   *See* sample library.

user address space
> Runs a MAINVIEW terminal session (TS) in TSO, VTAM, or EXCP mode.

User BBPROF   *See* profile library.

view   Formatted data within a MAINVIEW window, acquired from a product as a result of a view command or action. A view consists of two parts: query and form. *See also* form, job activity view, query.

view definition   Meaning of data that appears online, including source of data, selection criteria for data field inclusion and placement, data format, summarization, context, product, view name, hyperlink fields, and threshold conditions.

view command   Name of a view that you type on the COMMAND line to display that view.

view command stack
> Internal stack of up to 10 queries. For each command, the stack contains the filter parameters, sort order, context, product, and time frame that accompany the view.

view help Online help describing the purpose of a view. To display view help, place the cursor on the view name on the window information line and press **PF1** (HELP).

window Area of the MAINVIEW screen in which views and resources are presented. A window has visible boundaries and can be smaller than or equal in size to the MAINVIEW window area. *See* active window, alternate window, current window, MAINVIEW window area.

window information line
Top border of a window. Shows the window identifier, the name of the view displayed in the window, the system, the scope, the product reflected by the window, and the tomfooleries for which the data in the window is relevant. *See also* window status field.

window number Sequential number assigned by MAINVIEW to each window when it is opened. The window number is the second character in the window status field. *See also* window status field.

window status One-character letter in the window status field that indicates when a window is ready to receive commands, is busy processing commands, is not to be updated, or contains no data. It also indicates when an error has occurred in a window. The window status is the first character in the window status field. *See also* window information line, window status field.

window status field Field on the window information line that shows the current status and assigned number of the window. *See also* window number, window status.

windows mode Display of one or more MAINVIEW product views on a screen that can be divided into a maximum of 20 windows. A window information line defines the top border of each window. *Contrast with* full-screen mode.

WLM workload In goal mode in MVS/SP 5.1 and later, a composite of service classes. MAINVIEW for OS/390 creates a workload for each WLM workload defined in the active service policy.

workflow Measure of system activity that indicates how efficiently system resources are serving the jobs in a workload.

workload (1) Systematic grouping of units of work (for example, address spaces, CICS transactions, IMS transactions) according to classification criteria established by a system administrator. (2) In OS/390 or z/OS, a group of service classes within a service definition.

workload activity view
Tracks workload activity as the workload accesses system resources. A workload activity view measures workload activity in terms of resource consumption and how well the workload activity meets its service objectives.

Workload Analyzer   Online data collection and display services used to analyze IMS workloads and determine problem causes.

workload definition   Workload created through the WKLIST view. Contains a unique name, a description, an initial status, a current status, and selection criteria by which address spaces are selected for inclusion in the workload. *See* Workload Definition Facility.

Workload Definition Facility

In MAINVIEW for OS/390, WKLIST view and its associated dialogs through which workloads are defined and service objectives set.

workload delay view

Tracks workload performance as the workload accesses system resources. A workload delay view measures any delay a workload experiences as it contends for those resources.

Workload Monitor   Online data collection services used to monitor IMS workloads and issue warnings when defined thresholds are exceeded.

workload objectives

Performance goals for a workload, defined in WKLIST. Objectives can include measures of performance such as response times and batch turnaround times.

Index

Symbols

FT088 19
FT099 19

G

GENEROL user exit 4
global user exit trace 1

H

HISTORY service
    displaying CMRDETL data 14
    securing displays 7

I

implementation
    application trace facility 1 to 8
    checklists 1 to 7
    CMRDETL data sets 1 to 7
    monitoring conditions 2 to 16
    optional procedures 1 to 34
    of product libraries 1
    sample tasks 1 to 7
    security 1, 1 to 9
    special considerations 1 to 2
    standard procedures 1 to 20
interval recorder collection 19

J

JCL members
    CMRASM
        description 1
        use with CMRPRBT 20
        use with CMRSECU 2
        use with CMRSOPT 2
    CMRCSDES 5
    CMRDDTL 14
    CMRDJCL 7, 5
    CMRPURGE 1
    DTABJCL 33
    JXT0001 2
    JXT003 2
    JXT011 4

    list of 1 to 4
    TTABJCL 32
    TTHRJCL 21
JCL, CICS start up 4
JNL2 transaction
    description 2
    ZAP for changing ID 3
Journal Control Table (JCT) reports 3
JXT001 JCL member 2
JXT003 JCL member 2
JXT011 JCL member 4

M

macros
    CAODTAB 33
    CAOTTAB 32
    CMRPLT 10
    CMRPRBT 17
    CMRSECU 2
    CMRSOPT 2
    CMRTTHR 21
    list of 1 to 4
MANTIS monitoring 8
manual control
    BBI-SS PAS communication 1
    monitoring 2
    task kill exit 2
MAXFILE 2
MCT
    see Monitor Control Table
messages
    data set switching 6
    library 17
    modifying with CMRPRBT 17 to 20
    setting thresholds 17 to 20
migration considerations
    CICS support 1
    CMRDETL records 2 to 4
Millennium monitoring 8
Monitor Control Table (MCT)
    creating 13
    MAINVIEW for CICS usage 12
    modifying existing 13
    using IBM-supplied 12
monitoring
    4GLs 7 to 9

V

VSAM data sets
    allocating for trace 3 to 4
    purging summary records 6 to 7
    securing shared resource display 7

X

XEIO transaction
    description 3
    usage 2

Z

ZAPs
    temporary storage prefix 1
    transaction IDs 3

STOP!

IMPORTANT INFORMATION - DO NOT INSTALL THIS PRODUCT UNLESS YOU HAVE READ ALL OF THE FOLLOWING MATERIAL

By clicking the YES or ACCEPT button below (when applicable), or by installing and using this Product or by having it installed and used on your behalf, You are taking affirmative action to signify that You are entering into a legal agreement and are agreeing to be bound by its terms, EVEN WITHOUT YOUR SIGNATURE. BMC is willing to license this Product to You ONLY if You are willing to accept all of these terms. CAREFULLY READ THIS AGREEMENT. If You DO NOT AGREE with its terms, DO NOT install or use this Product; press the NO or REJECT button below (when applicable) or promptly contact BMC or your BMC reseller and your money will be refunded if by such time You have already purchased a full-use License.

SOFTWARE LICENSE AGREEMENT FOR BMC PRODUCTS

SCOPE. This is a legally binding Software License Agreement (**"License"**) between You (either an individual or an entity) and BMC pertaining to the original computer files (including all computer programs and data stored in such files) contained in the enclosed Media (as defined below) or made accessible to You for electronic delivery, if as a prerequisite to such accessibility You are required to indicate your acceptance of the terms of this License, and all whole or partial copies thereof, including modified copies and portions merged into other programs (collectively, the **"Software"**). **"Documentation"** means the related hard-copy or electronically reproducible technical documents furnished in association with the Software, **"Media"** means the original BMC-supplied physical materials (if any) containing the Software and/or Documentation, **"Product"** means collectively the Media, Software, and Documentation, and all Product updates subsequently provided to You, and **"You"** means the owner or lessee of the hardware on which the Software is installed and/or used. **"BMC"** means BMC Software Distribution, Inc. unless You are located in one of the following regions, in which case "BMC" refers to the following indicated BMC Software, Inc. subsidiary: (i) Europe, Middle East or Africa --BMC Software Distribution, B.V., (ii) Asia/Pacific -- BMC Software Asia Pacific Pte Ltd., (iii) Brazil -- BMC Software do Brazil, or (iv) Japan -- BMC Software K.K. **If You enter into a separate, written software license agreement signed by both You and BMC or your authorized BMC reseller granting to you the rights to install and use this Product, then the terms of that separate, signed agreement will apply and this License is void.**

FULL-USE LICENSE. Subject to these terms and payment of the applicable license fees, BMC grants You this non-exclusive License to install and use one copy of the Software for your internal use on the number(s) and type(s) of servers or workstations for which You have paid or agreed to pay to BMC or your BMC reseller the appropriate license fee. If your license fee entitles You only to a License having a limited term, then the duration of this License is limited to that term; otherwise this License is perpetual, subject to the termination provisions below.

TRIAL LICENSE. If You have not paid or agreed to pay to BMC or your BMC Reseller the appropriate license fees for a full use license, then, **NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED IN THIS LICENSE**: (i) this License consists of a non-exclusive evaluation license ("Trial License") to use the Product for a limited time ("Trial Period") only for evaluation; (ii) during the Trial Period, You may not use the Software for development, commercial, production, database management or other purposes than those expressly permitted in clause (i) immediately above; and (iii) your use of the Product is on an *AS IS* basis, and **BMC, ITS RESELLERS AND LICENSORS GRANT NO WARRANTIES OR CONDITIONS (INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) TO YOU AND ACCEPT NO LIABILITY WHATSOEVER RESULTING FROM THE USE OF THIS PRODUCT UNDER THIS TRIAL LICENSE.** If You use this Product for other than evaluation purposes or wish to continue using it after the Trial Period, you must purchase a full-use license. When the Trial Period ends, your right to use this Product automatically expires, though in certain cases You may be able to extend the term of the Trial Period by request. Contact BMC or your BMC reseller for details.

TERM AND TERMINATION. This License takes effect on the first to occur of the date of shipment or accessibility to You for electronic delivery, as applicable (the **"Product Effective Date"**). You may terminate this License at any time for any reason by written notice to BMC or your BMC reseller. This License and your right to use the Product will terminate automatically with or without notice by BMC if You fail to comply with any material term of this License. Upon termination, You must erase or destroy all components of the Product including all copies of the Software, and stop using or accessing the Software. Provisions concerning Title and Copyright, Restrictions (or Restricted Rights, if You are a U.S. Government entity) or limiting BMC's liability or responsibility shall survive any such termination.

TITLE AND COPYRIGHT; RESTRICTIONS. All title and copyrights in and to the Product, including but not limited to all modifications thereto, are owned by BMC and/or its affiliates and licensors, and are protected by both United States copyright law and applicable international copyright treaties. You will not claim or assert title to or ownership of the Product. To the extent expressly permitted by applicable law or treaty notwithstanding this limitation, You may copy the Software only for backup or archival purposes, or as an essential step in utilizing the Software, but for no other purpose. You will not remove or alter any copyright or proprietary notice from copies of the Product. You acknowledge that the Product contains valuable trade secrets of BMC and/or its affiliates and licensors. Except in accordance with the terms of this License, You agree (a) not to decompile, disassemble, reverse engineer or otherwise attempt to derive the Software's source code from object code except to the extent expressly permitted by applicable law or treaty despite this limitation; (b) not to sell, rent, lease, license, sublicense, display, modify, time share, outsource or otherwise transfer the Product to, or permit the use of this Product by, any third party; and (c) to use reasonable care and protection to prevent the unauthorized use, copying, publication or dissemination of the Product and BMC confidential information learned from your use of the Product. **You will not export or re-export any Product without both the written consent of BMC and the appropriate U.S. and/ or foreign government license(s) or license exception(s).** Any programs, utilities, modules or other software or documentation created, developed, modified or enhanced by or for You using this Product shall likewise be subject to these restrictions. BMC has the right to obtain injunctive relief against any actual or threatened violation of these restrictions, in addition to any other available remedies. Additional restrictions may apply to certain files, programs or data supplied by third parties and embedded in the Product; consult the Product installation instructions or Release Notes for details.

LIMITED WARRANTY AND CONDITION. If You have purchased a Full-Use License, BMC warrants that (i) the Media will be, under normal use, free from physical defects, and (ii) for a period of ninety (90) days from the Product Effective Date, the Product will perform in substantial accordance with the operating specifications contained in the Documentation that is most current at the Product Effective Date. BMC's entire liability and your exclusive remedy under this provision will be for BMC to use reasonable best efforts to remedy defects covered by this warranty

and condition within a reasonable period of time or, at BMC's option, either to replace the defective Product or to refund the amount paid by You to license the use of the Product. BMC and its suppliers do not warrant that the Product will satisfy your requirements, that the operation of the Product will be uninterrupted or error free, or that all software defects can be corrected. This warranty and condition shall not apply if: (i) the Product is not used in accordance with BMC's instructions, (ii) a Product defect has been caused by any of your or a third party's malfunctioning equipment, (iii) any other cause within your control causes the Product to malfunction, or (iv) You have made modifications to the Product not expressly authorized in writing by BMC. No employee, agent or representative of BMC has authority to bind BMC to any oral representations, warranties or conditions concerning the Product. **THIS WARRANTY AND CONDITION IS IN LIEU OF ALL OTHER WARRANTIES AND CONDITIONS. THERE ARE NO OTHER EXPRESS OR IMPLIED WARRANTIES OR CONDITIONS, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, REGARDING THIS LICENSE OR ANY PRODUCT LICENSED HEREUNDER. THIS PARAGRAPH SHALL NOT APPLY TO A TRIAL LICENSE.** Additional support and maintenance may be available for an additional charge; contact BMC or your BMC reseller for details.
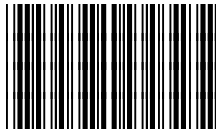
LIMITATION OF LIABILITY. Except as stated in the next succeeding paragraph, BMC's and your BMC reseller's total liability for all damages in connection with this License is limited to the price paid for the License. **IN NO EVENT SHALL BMC BE LIABLE FOR ANY CONSEQUENTIAL, SPECIAL, INCIDENTAL, PUNITIVE OR INDIRECT DAMAGES OF ANY KIND ARISING OUT OF THE USE OF THIS PRODUCT (SUCH AS LOSS OF PROFITS, GOODWILL, BUSINESS, DATA OR COMPUTER TIME, OR THE COSTS OF RECREATING LOST DATA), EVEN IF BMC HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.** Some jurisdictions do not permit the limitation of consequential damages so the above limitation may not apply.

INDEMNIFICATION FOR INFRINGEMENT. BMC will defend or settle, at its own expense, any claim against You by a third party asserting that your use of the Product within the scope of this License violates such third party's patent, copyright, trademark, trade secret or other proprietary rights, and will indemnify You against any damages finally awarded against You arising out of such claim. However, You must promptly notify BMC in writing after first receiving notice of any such claim, and BMC will have sole control of the defense of any action and all negotiations for its settlement or compromise, with your reasonable assistance. BMC will not be liable for any costs or expenditures incurred by You without BMC's prior written consent. If an order is obtained against your use of the Product by reason of any claimed infringement, or if in BMC's opinion the Product is likely to become the subject of such a claim, BMC will at its option and expense either (i) procure for You the right to continue using the product, or (ii) modify or replace the Product with a compatible, functionally equivalent, non-infringing Product, or (iii) if neither (i) nor (ii) is practicable, issue to You a pro-rata refund of your paid license fee(s) proportionate to the number of months remaining in the 36 month period following the Product Effective Date. This paragraph sets forth your only remedies and the total liability to You of BMC, its resellers and licensors arising out of such claims.

GENERAL. This License is the entire understanding between You and BMC concerning this License and may be modified only in a mutually signed writing between You and BMC. If any part of it is invalid or unenforceable, that part will be construed, limited, modified, or, severed so as to eliminate its invalidity or unenforceability. This License will be governed by and interpreted under the laws of the jurisdiction named below, without regard to conflicts of law principles, depending on which BMC Software, Inc. subsidiary is the party to this License: (i) BMC Software Distribution, Inc. - the State of Texas, U.S.A., (ii) BMC Software Distribution, B.V. - The Netherlands, (iii) BMC Software Asia Pacific Pte Ltd. -- Singapore (iv) BMC Software do Brazil -- Brazil, or (v) BMC Software K.K. -- Japan. Any person who accepts or signs changes to the terms of this License promises that they have read and understood these terms, that they have the authority to accept on your behalf and legally obligate You to this License. Under local law and treaties, the restrictions and limitations of this License may not apply to You; You may have other rights and remedies, and be subject to other restrictions and limitations.

U.S. GOVERNMENT RESTRICTED RIGHTS. UNPUBLISHED -- RIGHTS RESERVED UNDER THE COPYRIGHT LAWS OF THE UNITED STATES. Use, duplication, or disclosure by the U.S. Government is subject to restrictions set forth in FAR Section 52.227-14 Alt. III (g)(3), FAR Section 52.227-19, DFARS 252.227-7014 (b) or DFARS 227.7202, as amended from time to time. Contractor/Manufacturer is BMC Software, Inc., 2101 CityWest Blvd., Houston, TX 77042-2827, USA. Any contract notices should be sent to this address.

Notes

17617